DOCUMENT RESUME

ED 278 369 IR 012 480

AUTHOR Riccobono, John A.
TITLE Instructional Technology in Higher Education. A National Study of the Educational Uses of Telecommunications Technology in American Colleges and Universities.
INSTITUTION Corporation for Public Broadcasting, Washington, D.C.
SPONS AGENCY Center for Statistics (OERI/ED), Washington, DC.
REPORT NO ISBN-0-89776-102-2
PUB DATE May 86
NOTE 243p.
AVAILABLE FROM Corporation for Public Broadcasting, 1111 Sixteenth Street NW, Washington, DC 20036 ($7.00).
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Colleges; *Computer Assisted Instruction; Educational Technology; Higher Education; Interviews; National Surveys; Questionnaires; School Surveys; Tables (Data); *Teacher Education Programs; *Teleconferencing; *Telecourses; *Use Studies

ABSTRACT

This report summarizes the results of the 1985 Higher Education Utilization Study (HEUS-85), which provides current estimates of the availability, use, and support of instructional telecommunications technologies--video, audio, and computers--in the nation's colleges and universities, and describes the availability and use patterns of these technologies in teacher preparation programs. The first of six major sections presents a general discussion of technology use in education and an overview of the study, which involved a survey by mail questionnaire with telephone follow-up interviews of individuals who were most knowledgeable about (1) instructional uses of video and audio technologies, (2) the instructional uses of computers, and (3) the institution's teacher preparation program (where applicable). Separate questionnaires for each of the three groups of respondents were sent to 2,830 public and private two- and four-year postsecondary collegiate institutions, 1,202 of which had teacher education programs. The second section provides a summary of the major findings based on responses from 85% of the video/audio group, 86% from the computer group, and 92% from the teacher education group. The third section considers the availability of instructional technologies and program materials as reported by the survey respondents. The use of technologies for instruction is discussed in the fourth section, and the fifth addresses questions about support for instructional technology, including funding, personnel, and consortia membership and services. The sixth section focuses on the availability and use patterns of video, audio, and computer technologies in teacher education programs. Appended materials include the three questionnaires; a description of the survey design and procedures; and a list of members of the Study Advisory Committee. (DJR)

# INSTRUCTIONAL TECHNOLOGY IN HIGHER EDUCATION

# Instructional Technology in Higher Education

## A National Study of the Educational Uses of Telecommunications Technology in American Colleges and Universities

by
John A. Riccobono

Funding for this study was provided by
The Corporation for Public Broadcasting
and
The Center for Statistics,
U.S. Department of Education

May 1986

ISBN: 0-89776-102-2

$7.00

TABLE OF CONTENTS

LIST OF TABLES

TABLES 1 THROUGH 17 (Cited in Section III: Availability)

TABLES 18 THROUGH 55 (Cited in Section IV: Use)

# PREFACE

Since 1970, the Corporation for Public Broadcasting (CPB) and the Center for Statistics, formerly the National Center for Education Statistics (NCES), have cosponsored a program of research into the educational uses of telecommunications technologies. As part of this program, national surveys have been conducted in elementary, secondary, and postsecondary schools and in American households. These surveys are yielding information about the extent to which educational technologies are available, and how they are being used for both formal and informal learning. Such information is needed as a basis for effective planning, implementation, and evaluation of policies and programs designed to enhance educational achievement and to upgrade the instructional delivery system.

The first Higher Education Utilization Study was conducted in 1979 and examined only the uses of television by U.S. colleges and universities. The current study represents an attempt to update this research on television and to extend the investigation into the availability and use of other video, audio, and computer technologies.

We extend our sincere appreciation to all those who contributed to the successful conduct of this study. We are indebted to our colleagues at the nine national education associations that endorsed this study: American Association of Community and Junior Colleges, American Association of State Colleges and Universities, American Council on Education, Association of American Colleges, Association of American Universities, Association of Physical Plant Administrators of Universities and Colleges, Council of Independent Colleges, National Association of State Universities and Land Grant Colleges and National University Continuing Education Association.

During the design phase of this study, sound advice and guidance were provided by a Study Advisory Committee. The names and primary affiliations of the members of this Committee are listed in Appendix C.

At the Corporation for Public Broadcasting, Peter Dirr, Joan Katz, and Ric Grefé contributed significantly to the study, from initial design planning through critical review of report drafts. Valerie Hardeman diligently edited the text and prepared the final report for production.

At the Center for Statistics, Sam Peng and Doug Wright provided guidance and support throughout the study.

Our associates at Research Triangle Institute (RTI) of North Carolina, under the expert direction of Dr. Graham Burkheimer, were responsible for the survey operations. Others at RTI who worked closely with the principal investigator, Dr. John A. Riccobono, and deserve special acknowledgment are Elinor Cifton, who provided programming support for the data analyses, and Jeri Conklin, who typed, proofed and assembled the various drafts of the report.

A final word of acknowledgment and an expression of gratitude are due to the many faculty and administrators of the colleges and universities who took the time and effort to provide comprehensive information about the use of educational technologies within their institution. Without their commitment, this study would not have been possible.

Edward J. Coltman
Technical Project Director
Corporation for Public Broadcasting

Janice S. Ancarrow
Project Officer
Center for Statistics

# I. INTRODUCTION

## A. General

The explosive growth of technology in recent years has been well publicized. There are few occupations in which people do not encounter technology on a daily basis and have to deal with it. Education has come under increasing pressure to prepare our Nation's children and adults for the demands and opportunities presented by this rapid growth in technology. Parents are demanding that their children become "computer literate," and as a result, computers have been infused into our elementary and secondary school classrooms. However, critics claim that most teachers are ill-prepared to use this equipment and, consequently, actively resist it. Some point to this lack of qualified teachers as a major contributor to charges of mediocrity leveled against our public schools. Similarly, at the postsecondary level, critics have charged that many colleges and universities have been slow to assume their responsibility for training in technology, or have relinquished it altogether, and that private industry has been forced to assume this function.

The criticism is not restricted to computers, but extends to television and other video and audio technologies as well. Many feel that video and audio have not yet come close to fulfilling their promise for education, despite continued growth and increasing potential for their application.

On the other hand, proponents of education argue that such charges are largely unfounded and, to some extent, misguided. They point out that innovative educational applications of video, audio, and computer technology are ocurring in numerous settings, particularly at the postsecondary level. Many contend that the issue, especially for computers, is not how educators can best train students in the use of the new technology, but rather how educators can best use the technology to improve the quality and effectiveness of instruction. They argue that because of the tremendous advances in hardware, the importance of technology in instruction is being overemphasized, and that effective classroom application will remain limited until more effort is devoted to the production of high-quality instructional program materials.

While the debate continues, the fact is that very little systematic information exists on the use of technology in education. Some recent investigations have been conducted at the elementary and secondary school level[1]. Examinations of

---

[1] See, for example, J.A. Riccobono, School Utilization Study: Availability, Use, and Support of Instructional Media (Washington, D.C.: Corporation for Public Broadcasting and

postsecondary use have been less recent and limited to a particular technology,[2] or have been conducted only at local or regional levels;[3] but the current nationwide status of educational technology in our colleges and universities is largely unknown. How and to what extent are these technologies being used? Are tomorrow's teachers being prepared to use these technologies effectively for instruction? This report summarizes the results of the 1985 Higher Education Utilization Study (HEUS-85), which had as its major objective providing empirically based answers to these and related questions. Specifically, the major purpose of HEUS-85 is twofold:

- To provide current estimates of the availability, use, and support of instructional telecommunications technologies (video, audio, and computers) in the Nation's colleges and universities; and

- To identify and describe the availability and use patterns of these technologies in postsecondary teacher preparation programs.

B. Overview of HEUS-85

The study involved a census survey of all eligible public and private, two- and four-year postsecondary collegiate institutions included in the latest available Higher Education Directory,[4] as well as selected graduate- or professional-only schools contained in the directory. Excluded from the survey were: schools in outlying territories, central or system offices, proprietary schools, non-degree-granting specialty schools, service schools other than the U.S. academies, graduate centers for research only, divinity schools that did not offer liberal arts and sciences or teacher education programs, and closed schools as reported during the survey period. These exclusions resulted in a study universe of 2,830 institutions, 1,202 of which had teacher education programs.

---

Center for Statistics, 1985).

[2] P.J. Dirr et al. Higher Education Utilization Study Phase I: Final Report (Washington, D.C.: Corporation for Public Broadcasting and the National Center for Statistics, March 1981).

[3] R.J. Lewis, and R. Markwood, Instructional Applications of Information Technologies: A Survey of Higher Education in the West (Denver, Colo.: Interstate Commission for Higher Education and the Pacific Mountain Network, 1985).

[4] Higher Education Publications, The HEP 1984 Higher Education Directory (Washington, D.C.: Author, 1984).

The HEUS-85 study objectives and research questions required that data be solicited from individuals at each institution who were most knowledgeable about (1) the instructional uses of video and audio technologies, (2) the instructional uses of computers, and (3) the institution's teacher preparation program (if applicable). Separate questionnaires were constructed and pretested for each of the three respondent groups (i.e., an Instructional Video/Audio Questionnaire, a Computers for Instruction Questionnaire, and a Teacher Education Questionnaire). Copies of the final questionnaires appear in Appendix A.

The survey was conducted by mail questionnaire with telephone follow-up interviews of mail nonrespondents. Following notification of institutions to identify appropriate respondents, data were collected from January through May 1985. Final response rates for the three questionnaires were 85 percent for Video/Audio, 86 percent for Computers, and 92 percent for Teacher Education.

All members of the original study universe were initially assigned unit weights, but these weights were subsequently adjusted for nonresponse to reduce any resulting potential bias. Adjusted weights were then used to estimate results for the total populations of institutions and teacher education programs in the nation. Details of the HEUS-85 design and methodology appear in Appendix B.

C. How to Read the Tables in This Report

Most of the tables in this report contain several column headings. The entries typically are weighted percentages (rounded to the nearest whole percent), means, or medians and are based on the group indicated in the column heading. The last row in each table includes the "estimated population size," which represents the actual or approximate number of institutions or programs nationally (depending on the particular table) that fell into each of the categories indicated by the column headings.

In most cases, the findings are presented for the total universe of institutions, as well as for different types of institutions (public, private, two-year, four-year, professional and graduate). In examining differences by type of institution, it should be kept in mind that a strong relationship occurs between type of institution (level of offering and control) and institution size (i.e., student enrollment); consequently, differences in study results among types of institutions may be more appropriately attributable to the underlying size differences. The percentage of institutions within each size category is shown below.

| Type of Institution | Enrollment Size (No. of Students) 1-199 | 1,000-4,999 | 5,000 or more |
|---|---|---|---|
| 2-year public | 15% | 54% | 31% |
| 2-year private | 85 | 14 | 1 |
| 4-year public | 4 | 37 | 59 |
| 4-year private | 43 | 47 | 10 |
| Professional/graduate only | 68 | 31 | 1 |

D. Precision of the Estimates

The HEUS-85 survey was a census of all survey-eligible institutions of higher education rather than a sample survey. If all institutions had responded, estimates given in this report would be subject only to nonsampling or measurement errors; no sampling error would occur. That is, estimates presented in this report would be true population parameters known without error if all institutions had responded and no measurement errors were made.

Nonsampling or measurement errors can be attributed to many sources: inability to obtain information about all cases in the study; definitional difficulties; differences in interpretation of questions by respondents; respondents' inability or unwillingness to provide correct information; mistakes in recording or coding data; and other errors of collection, response, processing, coverage and estimation for missing data. These measurement errors cannot be quantified, but are probably quite small given the quality control procedures employed. Some additional error does exist in the estimates due to nonresponse (i.e., less than 100 percent coverage of the survey respondents). In light of the high overall response rate (85 to 92 percent of the universe), however, nonresponse errors are also likely to be small. In general, for estimates for the total population of institutions, this error will not exceed $\pm 1$ percentage point, with 95 percent confidence.

E. Structure of This Report

This report is organized into six major sections, including this introduction: Section II provides an overall summary of the major findings of the study; Section III considers in more detail the availability of instructional technologies and program materials, summarizing information obtained from the Computers

for Instruction and Instructional Video/Audio questionnaires; Section IV deals with use of technologies for instruction, again drawing information from Computers for Instruction and Instructional Video/Audio questionnaire responses; Section V addresses questions about support for instructional technology, including financial support, support personnel and activities, and consortia membership and services; and Section VI describes, for those institutions with Teacher Education Programs, the availability and use patterns of video, audio, and computer technologies in these programs based on information gathered with the Teacher Education Questionnaire.

Three technical appendices also are provided: Appendix A includes copies of the HEUS-85 survey instruments; Appendix B provides a summary of the HEUS-85 study design and procedures; and Appendix C lists members of the Study Advisory Committee.

## A. Availability of Instructional Technology

During 1984-85, the three major types of technology under investigation in this study (computers, video, and audio) were available in some form for instructional use by faculty and students in more than 90 percent of the 2,830 colleges and universities surveyed. Availability of most forms of equipment, particularly larger more sophisticated (and expensive) equipment, was substantially greater among two- and four-year public institutions than among their typically smaller counterparts in the private sector. For example, virtually all two- and four-year public institutions indicated that computers were available, whereas almost one out of five private two-year and 7 percent of private four-year institutions indicated that no computer facilities or equipment were available for faculty or student use. Moreover, when computers were available for instructional use in private schools (especially two-year private schools), they were most likely to be stand-alone microcomputers, whereas the vast majority of two- and four-year public institutions had both mainframes and minicomputers and microcomputers available for instruction.

Availability of video and audio for instruction requires, minimally, signal availability and a television or radio or videocassettes or audiocassettes and appropriate playback equipment. Such equipment is widely available among U.S. colleges and universities, and therefore was not assessed in this study. Instead, the investigation concentrated on the availability of various central reception and distribution facilities. The most frequently named methods of video central reception, regardless of institution type, were community cable system drops and master TV antenna, with about one half and one third, respectively, of all institutions indicating availability of these facilities. For distribution and exhibition of video material, a special video or film screening or projection room was the most frequently named facility for all types of institutions, followed by campus closed-circuit TV, community cable TV system, and cable TV educational access channels. For audio, central distribution was most likely through language laboratories and music listening rooms. As with computers, video and audio central reception and distribution facilities and equipment were substantially more available to two- and four-year public schools than to their private school counterparts.

B. Uses of Instructional Technology

Each of the three major types of technology (computer, video, and audio) was used for instructional purposes by at least some faculty and students in the large majority of colleges and universities where the technology was available. When computers were available, the most common uses by students were for hands-on learning about computers and for instructional use of general-purpose software, noted by 96 percent and 92 percent of the institutions, respectively. These were also the most frequently named faculty uses of computers among institutions with computers available. Another commonly named student use of computers (i.e., found in four out of five institutions) was programmed exercises, tutorials, and drills. The fastest-growing area of computer use among both students and faculty, according to most institutions, was in the instructional use of general-purpose software.

About three out of four institutions with mainframes or minicomputers available offered courses requiring students to use software or data bases installed on this equipment. Four-year institutions (81 percent) were proportionately more likely than two-year institutions (67 percent) to offer these courses, and on the average to offer more of these courses.

About one fourth of the institutions with computers available for instructional use had formal policies requiring computer literacy for some or all of their undergraduate students. Such policies were somewhat more likely among four-year than among two-year institutions. The most frequently specified elements of such policies (named by more than three out of four institutions) were that students should take an introductory computer course for credit and should know general procedures for using canned software. Aside from student computer literacy requirements, about 70 percent of institutions with computers had formal policies governing the use of this equipment. Access to computers by students and faculty was the most frequently named areas covered by these policies.

The most frequent instructional use of video and audio among all types of institutions was for one-way presentation to students on campus. More than 80 percent of all institutions indicated such use of video and only slightly fewer institutions (75 percent) indicated such use of audio technology. About one third of all institutions used video for one-way presentation of instruction to off-campus students; however, about half of the public two- and four-year institutions reported using video in this manner. The percentage of institutions using audio to deliver instruction to off-campus students was considerably lower, about 27 percent.

A focal point of this investigation was the extent to which institutions offered credit and noncredit courses involving substantial use of video or audio technology in the delivery of instructional material. A total of 902 (32 percent) of all eligible colleges and universities were found to have offered one or more "video telecourses" during 1984-85 and 254 (9 percent) of the institutions offered one or more "audio courses." Video telecourses were offered by half of all public two-year schools and 44 percent of public four-year schools; in contrast, only about 17 percent of the private four-year and 5 percent of the private two-year schools offered such telecourses. Similarly, proportionately more public than private two- and four-year schools offered audio courses during 1984-85.

Overall, the 902 institutions offered a total of 10,594 video telecourses in 1984-85, for an average of 12 courses per institution. The total number of enrollments, over all courses and institutions, was 399,212. The average enrollment per school was 442 students in 12 telecourses, for an average enrollment per telecourse of about 38 students. Audio courses, although offered by only 9 percent of the institutions, totaled 3,676 in 1984-85, or an average of about 14 audio courses per school. The aggregate number of enrollments in these courses was 139,750, with an average enrollment per audio course of about 38 students. While about half of all video telecourses were used in behavioral and social science instruction, the primary use of audio courses was in teaching languages and performing arts. Moreover, the majority of both video telecourse and audio course use was for introductory or lower-division courses, with two thirds of both types of offerings being used at this level.

This study also attempted to assess the extent to which institutions used video and audio technologies for live or "real-time" instruction of students on or off campus. The extent of such use is, of course, constrained by the availability of appropriate equipment and facilities. Nonetheless, the study found that about one out of four colleges and universities used live camera-in-the-classroom television to some extent in 1984-85. Such use was greatest among professional/graduate schools (42 percent) and proportionately higher among four-year public schools (33 percent) than among four-year private (23 percent) or two-year schools (24 percent). In terms of live, interactive use of audio, the survey found that only about 10 percent of the institutions used audio conferencing for instructional purposes during 1984-85.

C. Support for Instructional Technology

Institutional support for instructional technologies was demonstrated in several ways, including membership in consortia or cooperative arrangements with other institutions or organizations, faculty training programs and expert assistance

provided by institutions, financial support or incentives for use and other institutional policies and procedures.

About one third of all colleges and universities belonged to a formal or informal computer consortium during 1984-85, with greater percentages of public than private schools involved in such consortia (40 percent versus 29 percent) and, among public schools, proportionately more four-year (49 percent) than two-year (34 percent) institutions belonging to such consortia. Estimates of video consortium membership were comparable, with 35 percent of all institutions reporting membership in video consortia during 1984-85, and proportionately more public schools (46 percent) than private schools (22 percent) indicating such membership. In contrast to computer consortia, however, higher percentages of two-year public schools (48 percent) than four-year public schools (42 percent) were members of a video consortium. Relatively few institutions (9 percent) reported membership in audio consortia, and in many cases these consortia provided both video and audio services to their membership. With regard to each type of consortium, most institutions indicated having held membership for at least five years, about three fourths indicated satisfaction with the services provided and almost all intended to remain members for the next three years.

About two thirds of the two- and four-year institutions offered some training for faculty in the instructional uses of computers during 1984-85, with proportionately more public than private institutions offering such training. On the average, faculty training in the use of computers offered by these institutions ran from 10 to 15 hours, and almost always involved training in the operation of equipment and of canned software. The findings related to faculty training in the use of video technologies for instruction closely paralleled those for computers, although the training offered in video use was generally less extensive (typically from two to seven hours). In most cases, other institution faculty were responsible for conducting the faculty training in both computer and video technologies. Aside from training, more than half (57 percent) of all institutions provided organized expert assistance (e.g., special staff or faculty committees) to faculty wanting to use computers and about three fourths of the institutions provided such assistance to faculty wishing to use video for instructional purposes.

This study also found that about two thirds of all colleges and universities were providing financial assistance (discount prices, loans, grants, group purchase) to students or faculty buying computer hardware. Such assistance was most often offered to both faculty and students, although substantial numbers of institutions restricted assistance to faculty only.

D. Teacher Education Programs

A major focus of this investigation was the extent that teacher education programs offered to or required of students, directly or through cooperative arrangements within the same or another institution or organization, teacher training in the instructional uses of technology. This study found that more than half of all programs offered some form of training in the instructional use of each major technology during 1984-85. Proportionately higher numbers of programs offered training in computers (84 percent) than in video (64 percent) or audio (55 percent) technologies. This was true regardless of type of program, although the larger combined undergraduate-graduate programs were most likely to have offered training in each type of technology. Strictly undergraduate programs were least likely to have offered training in computers (72 percent), whereas small combined undergraduate-graduate programs and graduate-only programs were least likely to have offered training in video technology (about 57 percent of these programs). Only about one third of the graduate programs and 44 percent of the small combined programs offered training in audio technology, whereas about 60 percent of the larger combined programs and undergraduate programs offered such training.

About 18 percent (or 66,055) of the undergraduate students and the same percentage (or 45,591) of the graduate students participated in training programs in the instructional uses of computers that were offered by their school or department of education in 1985. The percentages are about the same for undergraduate students but somewhat lower for graduate students for training offered in the instructional uses of video and audio technologies; about 17 percent of the undergraduate students and only 6 to 8 percent of the graduate students were estimated to have received training in these technologies during the most recent term.

## III. AVAILABILITY OF INSTRUCTIONAL TECHNOLOGY

This section presents results pertaining to the availability of technological facilities and equipment and program materials for use in instruction and instructional management and assessment. Factors influencing availability and accessibility are also assessed, including the amount of available equipment, location of program materials and off-campus accessibility.

### A. Computers

Computers, either mainframes and minicomputers or stand-alone microcomputers, were available for instructional use by at least some faculty and students in the vast majority (95 percent) of our nation's colleges and universities during the 1984-85 school year. Virtually all public and nine out of ten private colleges and universities indicated that such equipment was available. Table 1 shows that unavailability of computers was largely restricted to the two-year private (18 percent), four-year private (7 percent), and professional/graduate institutions (22 percent), which typically have smaller student enrollments. Moreover, in these types of institutions, the instructional computers available were more likely to be stand-alone microcomputers than mainframes or minicomputers. For example, while three out of four (75 percent) of the two-year private institutions reported availability of microcomputers, only 38 percent of these schools reported that the institution's mainframe or minicomputer was available for instructional use. On the other hand, the percentages of four-year public institutions that reported similar availability were 94 percent for mainframe and minicomputers and 91 percent for stand-alone microcomputers. Public institutions were also more likely than private institutions to report the availability of a regional public computer service for faculty and student instructional use, and the percentage of strictly professional/graduate schools (10 percent) making use of a commercial computer service was twice that of two- or four-year institutions. About one in four institutions also reported that computers were available for instructional use through local area networks, with more than one third (37 percent) of four-year public institutions reporting availability through such networks.

Among institutions with computers available, most reported that the institution had more than one mainframe or minicomputer available for use by students, faculty, or administrators. As shown in Table 2, the average number of mainframes and minicomputers reported by these institutions was about six; however, their distribution was highly positively skewed (the median was two and the mode was one). Table 3 shows that student and faculty access to this equipment from terminals outside the institution was possible at more than half (55 percent) of the

institutions, and twice as likely at four-year schools (68 percent) than at two-year schools (34 percent).

The availability alone of mainframe and minicomputer equipment is not sufficient for effective instructional use of that equipment; software useful for instruction must also be installed. Table 4 shows that 85 percent of the institutions with mainframe or minicomputers available had one or more types of instructional software installed. Four-year institutions and professional/graduate schools were more likely to have such software available than were two-year institutions. Statistical analysis packages were the most frequently cited type of software for all types of institutions except two-year private schools, which more frequently reported the availability of data base management systems.

Unlike mainframe and minicomputers, which typically can be accessed simultaneously by many individuals for the same or different purposes, microcomputers are generally dedicated single-user machines. Consequently, the use of microcomputers for instruction at an institution may require a substantial investment in equipment, depending on the size of the institution and the extent of instructional use. Table 5 shows that most institutions with microcomputers available reported having between 11 and 50 units, except for the (typically large) four-year public institutions, almost half (46 percent) of which indicated having more than 100 microcomputers.

Given the single-user nature of microcomputers and their recent proliferation in elementary and secondary schools, businesses, and (to a lesser extent) households, some educational planners and policymakers have predicted that college students, at least those majoring in certain fields, might soon be required to own or acquire a microcomputer for use in their coursework. Table 6 shows that such a requirement was relatively infrequent in 1984-85. Almost all of the institutions indicated that no such requirement prevailed for all students, and fewer than one in ten reported such a requirement for undergraduate students in certain fields of study. Furthermore, of those institutions with no current policy requiring undergraduate students to own or acquire a microcomputer, less than 10 percent reported planning or considering such a policy (Table 7).

When asked if the institution had a central collection or collections containing software documentation, about two thirds (64 percent) of the institutions with mainframes or minicomputers indicated that they did (Table 8). Four-year institutions were substantially more likely to have such collections (71 percent) than were two-year institutions (54 percent). As shown in Table 9, the large majority (93 percent) of institutions also housed microcomputer software in central collections. Word processing and business applications software were most frequently noted by

all types of institutions; however, statistical analysis packages for micros were also relatively prevalent and more likely to be found in four-year institutions (50 percent) than in two-year institutions (37 percent).

Institutional respondents with computers available were asked to indicate the most important computer-related need for their students, faculty, and administrators. Table 10 shows that the perceived most important need of students was "more work stations or terminals," with about half (54 percent) of all institutions reporting this need. This student need was the most frequently noted by respondents, regardless of type of institution. About one out of three institutions mentioned "more computer software" as the most important student need, with substantially more two-year than four-year institutions reporting this need. These two needs were also the most frequently reported for faculty (Table 11) and administrators (Table 12); however, for both groups, more computer software was more frequently mentioned as the most important need by two-year institutions; whereas more work stations or terminals was more frequently mentioned by four-year institutions. Interestingly, in comparison to reported student and faculty needs, substantially higher percentages of institutions, regardless of type, reported "more storage capacity" as the most important computer-related need for administrators (Table 12).

Most institutions (72 percent) indicated that, in the past three years, they have diverted many computer activities from mainframes or minicomputers to stand-alone microcomputers (Table 13). About one third of the institutions indicated a similar shift away from reliance on one mainframe or minicomputer to use of several mainframe or minicomputers. Such shifts were less likely to have occurred in private than in public institutions, with proportionately more of the former reporting that computer resource configuration has remained stable over the past three years.

B. Video and Audio

Signal availability, for both video/television and audio/radio, is known to be almost universal among U.S. colleges and universities and, therefore, was not assessed in the present survey. Respondents were asked, however, to indicate the various central video reception facilities that were available at their institutions. The most frequently named methods of central video reception for all types of schools were "community cable system drops" and "master TV antenna," with about one-half and one third, respectively, of all institutions indicating availability of these facilities (Table 14). Satellite receive-only dishes (fixed or rotatable) were available in only about one out of ten institutions, and instructional television-fixed service or other microwave reception equipment was available in about 7 percent of

all institutions. Once again, two- and four- year public institutions were more likely than their counterparts in the private sector to have each of these facilities available. In fact, the percentage of private institutions with none of these video reception facilities (43 percent) was more than twice that of public schools (19 percent).

Findings were similar with regard to video distribution facilities (Table 15), except that the most frequently available facility for all types of institutions was a "special video or film screening/projection room." While availability was generally more likely in public than in private institutions, about one third of all institutions indicated availability of campus closed-circuit TV, buildings wired by community cable TV system, or community cable TV system educational access channels. ITFS transmission equipment and noncommercial TV broadcast stations were available in less than ten percent of the institutions, except for four-year public schools, where availability of such facilities was somewhat higher.

The most frequently available audio distribution facilities, present in more than half of all institutions, were language labs and music listening rooms (Table 16). Substantially higher percentages of four-year institutions (38 percent) had use of noncommercial radio broadcast stations than did two- year institutions (13 percent), and about half (51 percent) of all four-year public institutions indicated availability of such a broadcast station. Audio conferencing facilities and music/speech synthesizers were available in only about 15 percent of the institutions.

Distribution of video and audio instructional material does not, of course, require the existence of these central distribution and exhibition facilities. As shown in Table 17, more than nine out of ten institutions indicated the presence of instructional materials centers for housing video or audio program materials. While the great majority of institutions kept videocassettes and tapes (90 percent) and audiocassettes and tapes (83 percent) in such centers, it is interesting that about 15 percent of both two- and four-year institutions also reported keeping interactive videodisc packages (with computer software) in these centers.

Tables 1 through 17
Cited in Section II: Availability

Most of the tables in this section report data for 1984-85 by level of offering and control. Other parameters are identified on individual tables.

Table 1
Availability of Various Types of Computer Facilities and Equipment for Faculty or Student Instructional Use[a]

| Computer Facilities and Equipment Available | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Institution's mainframe or minicomputers | 84% | 38% | 77% | 94% | 72% | 79% | 52% | 88% | 65% | 77% |
| Regional public computer service | 10 | 5 | 9 | 22 | 7 | 12 | 6 | 14 | 7 | 11 |
| Commercial computer service | 4 | 4 | 4 | 6 | 4 | 5 | 10 | 4 | 5 | 5 |
| Microcomputers (stand-alone) | 90 | 75 | 87 | 91 | 84 | 86 | 65 | 90 | 81 | 86 |
| Local area networks | 20 | 8 | 18 | 37 | 18 | 24 | 13 | 26 | 16 | 21 |
| Other | 6 | 3 | 5 | 6 | 5 | 5 | 10 | 6 | 5 | 5 |
| None of the above | 1 | 18 | 4 | 1 | 7 | 5 | 22 | 1 | 10 | 5 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 8 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are precentages.

[b] Analysis based on all institutions.

Table 2
Number of Mainframe Minicomputers per Institution[a]

| No. of Mainframe or Minicomputers per Institution | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Mean | 5.48 | 1.94 | 5.23 | 7.42 | 5.48 | 6.26 | 8.29 | 6.25 | 5.23 | 5.84 |
| Median | 2.00 | 1.00 | 2.00 | 3.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Mode | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a]As determined from Item 35 of the Computers for Instruction Questionnaire.

[b]Analysis restricted to institutions with computers available.

Table 3
Access to Mainframe and Minicomputers From Terminals Outside the Institution[a]

| Computer Access from Terminals Outside the Institution Available | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 35% | 23% | 34% | 79% | 60% | 68% | 70% | 53% | 57% | 55% |
| Estimated population size | 778 | 67 | 845 | 510 | 772 | 1,282 | 58 | 1,315 | 870 | 2,185 |

[a] As determined from Item 13 of the Computers for Instruction Questionnaire.

[b] Analysis restricted to institutions with mainframe or minicomputers available.

Table 4

Types of Instructional Software Installed on Mainframe or Minicomputers[a]

| Type of Software | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Statistical analysis packages | 51% | 19% | 49% | 96% | 75% | 84% | 76% | 70% | 71% | 70% |
| Simulation software | 24 | 14 | 23 | 66 | 44 | 53 | 29 | 41 | 41 | 41 |
| Data base management systems | 48 | 35 | 47 | 69 | 55 | 61 | 57 | 57 | 54 | 56 |
| Other | 15 | 12 | 15 | 16 | 17 | 16 | 17 | 16 | 17 | 16 |
| None of the above | 24 | 45 | 25 | 2 | 13 | 9 | 12 | 14 | 16 | 15 |
| Estimated population size | 778 | 67 | 845 | 510 | 772 | 1,282 | 58 | 1,315 | 870 | 2,185 |

[a] As determined from Item 11 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that appli
Data are percentages.

[b] Analysis restricted to institutions with mainframe or minicomputers available.

Table 5
Number of Stand-Alone Microcomputers Available[a]

| No. Available | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Totalb |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| 10 or fewer | 4% | 21% | 6% | 2% | 19% | 13% | 26% | 3% | 20% | 11% |
| 11 to 50 | 55 | 70 | 57 | 29 | 57 | 47 | 48 | 45 | 58 | 51 |
| 51 to 100 | 26 | 7 | 24 | 23 | 13 | 17 | 15 | 25 | 12 | 19 |
| 101 to 250 | 14 | 0 | 12 | 28 | 7 | 14 | 7 | 19 | 6 | 13 |
| More than 250 | 1 | 2 | 1 | 18 | 4 | 9 | 4 | 8 | 4 | 6 |
| Estimated population size | 832 | 134 | 966 | 492 | 900 | 1,392 | 71 | 1,345 | 1,084 | 2,429 |

[a]As determined from Item 35b of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b]Analysis restricted to institutions with microcomputers available.

Table 6

Requirements That Undergraduate Students Own or Acquire a Microcomputer for Coursework[a]

| Requirement to Own or Acquire Microcomputer | Two-Year | | | Four-Year | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | Public | Private | Total[b] |
| For all undergraduates | * | 1% | * | 0% | 1% | * | * | 1% | * |
| For undergraduates in certain fields | 7 | 4 | 7 | 7 | 6 | 7 | 7 | 6 | 7 |
| No requirement | 92 | 95 | 93 | 92 | 93 | 93 | 92 | 93 | 93 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 1,467 | 1,253 | 2,720 |

[a] As determined from Item 25 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions with undergraduate students.

* Represents a positive percentage less than 0.5.

Table 7

Institutions Planning or Considering a Policy
Requiring Undergraduate Students to Own or Acquire Microcomputers[a]

| Policy Under Consideration | Two-Year | | | Four-Year | | | Total | Total | |
|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | Public | Private | Totalb |
| Percentage of institutions | 3% | 7% | 4% | 12% | 13% | 13% | 7% | 12% | 9% |
| Estimated population size | 854 | 173 | 1,027 | 500 | 1,000 | 1,500 | 1,354 | 1,173 | 2,527 |

[a]As determined from Item 26 of the Computers for Instruction Questionnaire.

[b]Analysis restricted to institutions with no current policy requiring undergraduates to own microcomputers.

Table 8

Mainframe and Minicomputer Software Documentation in Central Collection[a]

| Central Collection Available | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Totalb |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 55% | 40% | 54% | 76% | 68% | 71% | 51% | 63% | 65% | 64% |
| Estimated population size | 778 | 67 | 845 | 510 | 772 | 1,282 | 58 | 1,315 | 870 | 2,185 |

[a]As determined from Item 10 of the Computers for Instruction Questionnaire.

[b]Analysis restricted to institutions with mainframe or minicomputers available.

Table 9
Types of Microcomputer Software Available in Central Collections[a]

| Type of Microcomputer Software | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Business applications | 84% | 70% | 82% | 77% | 79% | 79% | 65% | 82% | 77% | 80% |
| Word processing | 88 | 83 | 88 | 80 | 85 | 83 | 79 | 85 | 84 | 85 |
| Computer-based instructional management | 49 | 36 | 47 | 46 | 35 | 39 | 41 | 48 | 35 | 43 |
| Statistical analysis packages | 39 | 18 | 37 | 55 | 48 | 50 | 54 | 46 | 44 | 45 |
| Data base systems | 71 | 54 | 69 | 69 | 62 | 65 | 64 | 70 | 61 | 66 |
| Communications | 28 | 16 | 26 | 47 | 35 | 39 | 48 | 35 | 33 | 34 |
| Microcomputer software documentation | 53 | 49 | 52 | 62 | 59 | 60 | 56 | 57 | 58 | 57 |
| None of the above | 7 | 9 | 7 | 6 | 7 | 7 | 15 | 7 | 8 | 7 |
| Estimated population size | 832 | 134 | 966 | 492 | 900 | 1,392 | 71 | 1,345 | 1,084 | 2,429 |

[a] As determined from Item 10 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that ap
Data are percentages of institutions.

[b] Analysis restricted to institutions with microcomputers available.

Table 10
Most Important Computer-Related Needs for Students[a]

| Most Important Computer-Related Need for Students | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| More computer software | 42% | 42% | 42% | 27% | 34% | 32% | 23% | 36% | 35% | 35% |
| More work stations or terminals | 50 | 44 | 49 | 62 | 53 | 56 | 67 | 55 | 53 | 54 |
| More storage capacity | 3 | 5 | 4 | 3 | 5 | 4 | 0 | 3 | 4 | 4 |
| More peripherals | 5 | 9 | 5 | 8 | 8 | 8 | 10 | 6 | 8 | 7 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a] As determined from Item 34-1 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions with computers available.

Table 11
Most Important Computer-Related Needs for Faculty[a]

| Most Important Computer-Related Need for Faculty | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| More computer software | 47% | 53% | 48% | 30% | 39% | 36% | 32% | 40% | 40% | 40% |
| More work stations or terminals | 47 | 38 | 46 | 59 | 53 | 55 | 56 | 52 | 51 | 52 |
| More storage capacity | 3 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| More peripherals | 3 | 8 | 4 | 8 | 5 | 6 | 9 | 5 | 6 | 5 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a] As determined from Item 34-2 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions with computers available.

Table 12
Most Important Computer-Related Needs for Administrators[a]

| Most Important Computer-Related Need for Faculty | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Totalb |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| More computer software | 39% | 43% | 40% | 35% | 36% | 36% | 45% | 38% | 37% | 37% |
| More work stations or terminals | 38 | 31 | 37 | 42 | 38 | 39 | 32 | 39 | 37 | 38 |
| More storage capacity | 13 | 19 | 14 | 14 | 15 | 15 | 13 | 14 | 16 | 15 |
| More peripherals | 10 | 7 | 9 | 9 | 11 | 10 | 10 | 9 | 10 | 10 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a]As determined from Item 34-3 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b]Analysis restricted to institutions with computers available.

Table 13
Change in Computer Resources Over the Past Three Years[a]

| Three-Year Change in Computer Resources | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Computer resource configuration has remained about the same | 14% | 30% | 16% | 7% | 19% | 15% | 15% | 11% | 20% | 15% |
| Shift from reliance on one to use of several mainframe or minicomputers | 27 | 11 | 25 | 49 | 32 | 38 | 26 | 35 | 30 | 33 |
| Computer activities diverted from mainframe or minicomputers to stand-alone microcomputers | 74 | 63 | 73 | 78 | 67 | 71 | 74 | 75 | 67 | 72 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a]As determined from Item 36 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis restricted to institutions with computers available.

Table 14
Availability of Various Central Video
Reception Facilities[a]

| Three-Year Change in Computer Resources | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Master TV antenna | 42% | 25% | 40% | 35% | 25% | 29% | 22% | 40% | 25% | 33% |
| Community cable system drop(s) | 53 | 36 | 50 | 61 | 40 | 47 | 20 | 55 | 38 | 47 |
| ITFS reception equipment | 7 | 0 | 6 | 14 | 3 | 7 | 6 | 10 | 3 | 6 |
| Fixed satellite receive-only dish | 9 | 2 | 8 | 27 | 7 | 13 | 5 | 15 | 6 | 11 |
| Rotatable satellite receive-only dish | 15 | 3 | 13 | 23 | 6 | 12 | 6 | 18 | 5 | 12 |
| Other microwave reception equipment | 6 | 0 | 5 | 19 | 3 | 8 | 6 | 11 | 2 | 7 |
| Satellite transmission antenna (uplink) | 1 | 0 | 1 | 5 | 1 | 2 | 0 | 2 | 1 | 2 |
| None of the above | 19 | 46 | 23 | 19 | 41 | 34 | 57 | 19 | 43 | 31 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 42 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 15
Availability of Video Distribution and Exhibition Facilities[a]

| Video Facility Available | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Campus closed-circuit TV (on-campus origination)* | 40% | 17% | 37% | 53% | 21% | 32% | 48% | 45% | 21% | 34% |
| Campus buildings wired by community cable TV system | 36 | 32 | 35 | 44 | 31 | 35 | 12 | 39 | 29 | 34 |
| Special video or film screening/projection room | 59 | 51 | 58 | 74 | 64 | 67 | 62 | 65 | 62 | 63 |
| ITFS transmission equipment | 5 | 1 | 5 | 12 | 3 | 6 | 4 | 8 | 2 | 5 |
| Noncommercial TV broadcast station | 9 | 7 | 9 | 23 | 7 | 12 | 5 | 14 | 7 | 11 |
| Community cable TV system educational/access channels | 36 | 26 | 35 | 41 | 24 | 30 | 11 | 38 | 23 | 31 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 43 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institution.

[b] Analysis based on all institutions.

Table 16
Availability of Audio Distribution and Exhibition Facilities[a]

| Audio Facility Available | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Noncommercial radio broadcast station | 14% | 11% | 13% | 51% | 32% | 38% | 2% | 27% | 28% | 27% |
| Audio conferencing facilities | 17 | 4 | 15 | 27 | 9 | 15 | 20 | 21 | 9 | 15 |
| Music/speech synthesizers | 11 | 4 | 10 | 30 | 14 | 19 | 1 | 18 | 12 | 15 |
| Language labs | 48 | 36 | 46 | 81 | 61 | 68 | 4 | 59 | 55 | 57 |
| Music listening rooms | 42 | 41 | 42 | 75 | 63 | 67 | 4 | 53 | 57 | 55 |
| Central public address system | 21 | 18 | 20 | 14 | 18 | 17 | 30 | 18 | 9 | 18 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 43 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of istitutions.

[b] Analysis based on all institutions.

Table 17
Video and Audio Materials Available in Instructional Materials Centers[a]

| Video and Audio Materials Available | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Videocassettes/tapes or videodiscs | 96% | 75% | 93% | 94% | 85% | 88% | 83% | 95% | 83% | 90% |
| Interactive videodisc packages with computer software | 17 | 13 | 17 | 24 | 10 | 15 | 18 | 20 | 10 | 16 |
| Audiocassettes/tapes or records (music only) | 83 | 61 | 79 | 85 | 79 | 81 | 17 | 82 | 73 | 78 |
| Audiocassettes/tapes or records (excluding music only) | 89 | 72 | 86 | 86 | 78 | 81 | 77 | 88 | 77 | 83 |
| None of the above | 3 | 16 | 5 | 3 | 9 | 7 | 14 | 3 | 11 | 7 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a]As determined from Item 41 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis based on all institutions.

# IV. USES OF INSTRUCTIONAL TECHNOLOGY

## A. Use of Computers

### 1. Overall Use By Students, Faculty and Administrators

Computers (mainframes and minicomputers or stand-alone microcomputers) can be and are being used for a wide variety of instructional purposes. Institutional respondents in schools with computers available were asked to indicate the major educational purposes for which students, faculty and administrators at their institutions used computers. The most common use by students was hands-on learning about the use of computers (noted by 96 percent of the institutions), followed closely by instructional use of general-purpose applications software (92 percent) (Table 18). Student use of programmed exercises and tutorials also was named by four out of five institutions. Although use of computers by students for control of laboratory instruments or apparatus and for research and bibliographic purposes was noted by about half of all institutions with computers available, these student uses were far more likely to be found in four-year and professional/graduate schools than in two-year institutions.

The findings regarding faculty use of computers are quite similar to those for students, although administrative use of general and special-purpose software by faculty was almost as common as their instructional use of such software, and only slightly less common than such use by institutional administrators.

The fastest-growing areas of computer use by students, faculty and administrators (Tables 19-21) corresponded closely to areas of greatest frequency of use. It is interesting, however, that instructional use of general-purpose applications software was reported by substantially greater numbers of schools as the fastest-growing student and faculty use than was hands-on use in learning about computers. Perhaps even more notable is that only about ten percent of the institutions named programmed exercises and tutorials as the fastest-growing student use.

About 93 percent of all institutions had one or more administrative systems computerized during the 1984-85 school year (Table 22). More than nine out of ten two- and four-year public schools had computerized systems for handling student grade records and only slightly fewer had such systems for payroll and course offerings. While the percentages of private schools with computerized systems for these administrative functions was considerably smaller, Table 23 shows that such systems were scheduled to be in place by the following year in roughly three out of four of these private institutions.

In light of the rather widespread use of computers for several administrative functions in postsecondary institutions, it is not surprising that an estimated 40 percent of all computer use in these institutions was for administrative purposes (Table 24). Nonetheless, the predominant use of computers in all institutions, except strictly professional/graduate schools, was instructional. This is especially true in two-year schools, where almost all nonadministrative computer use was instructional, while in four-year institutions a significant proportion of total computer use (14 percent) was for research.

2. Use of Computers with Peripherals

This survey also attempted to assess the extent to which available computer equipment (mainframe or minicomputers and microcomputers) was used in conjunction with various video and audio peripherals. Respondents indicated that the majority of institutions did not use any particular peripheral, either with mainframe and minicomputers (Table 25) or with microcomputers (Table 26). Graphics peripherals (e.g., plotters, image digitizers) were the most frequently used type among all institutions, both with mainframe and minicomputers and with microcomputers. In general, peripherals were more likely to be used with microcomputers than with mainframe and minicomputers, probably because of the cost-free nature of microcomputer use versus the typical cost-sharing associated with mainframe and minicomputer use. In fact, except for graphic peripherals, no video or audio peripheral was being used with mainframes and minicomputers at more than 5 percent of the institutions (Table 5). In contrast, where microcomputers were available, about one in five institutions was using the equipment with music synthesizers and 13 percent were using them with voice synthesizers, videocassette recorders or linear-access videodisc players (Table 26).

3. Course Offerings Requiring Computer Use

About 75 percent of the institutions with mainframes or minicomputers available offered courses in which students were asked to use software or data bases installed on that equipment (Table 27). These course offerings were related to institutional level of offering, with 81 percent of four-year schools versus 67 percent of two-year institutions offering such courses. The number of courses offered also was related to institutional level of offering, with four-year institutions offering, on the average, 20 such courses, compared with an average of 7 courses at two-year institutions (Table 28).

4. Institutional Policies Regarding Computer Use

About one in four of the institutions with computers available indicated having a formal computer literacy policy for

some or all of their undergraduate students; 12 percent of the institutions with computers indicated such a policy for all undergraduate students, and another 15 percent had computer literacy requirements only for students majoring in certain disciplines (Table 29). Four-year institutions (30 percent) were somewhat more likely to have formal computer literacy policies than were two-year institutions (22 percent).

Where formal computer literacy requirements were restricted to certain academic disciplines, the most frequently named fields of study with such requirements were, in order, computer science, business, engineering, and mathematics (Table 30). It may be noteworthy that the next most frequently named area of study was education, named by one of three institutions with computer literacy policies targeted only at certain fields of study.

Institutions with formal computer literacy policies for some or all of their undergraduate students were asked to indicate the elements constituting that policy. Table 31 shows that the most frequently named element, regardless of institutional type, was that students should take an introductory computer course for credit. The second most commonly noted element, named by about three out of four institutions with such policies, was that students should know general procedures for using canned software. About two thirds of the institutions indicated that their computer literacy policy required that students know what problems are and are not amenable to computer solution, and almost as many institutions required that students be familiar with the ethical issues (e.g., data privacy, copyrights) associated with computer use.

Aside from computer literacy policies, about seven out of ten institutions with computers available indicated that they had some formal policy or policies governing the use of computers (Table 32). Access to computers by students and faculty was the most frequently named area covered by these policies (noted by 60 percent of the institutions). About one third of the institutions also indicated that their formal policies covered duplication of copyrighted software and a similar number of institutions indicated that data security (loss prevention, safeguards against intrusion) issues were covered by such a policy.

B. Video and Audio

Some of the current findings pertaining to the use of video technology may be compared to findings from HEUS-79[5]. Where possible and appropriate, such comparisons are made, and the differences between the 1979 and 1985 estimates are noted in this section.

---

[5] Dirr et al. op. cit.

1. General Uses of Video and Audio

In 1984-85 the most frequent use of video among all types of institutions was for one-way presentation of instruction to on-campus students (Table 33). Use of video for presentation of instruction to off-campus students was proportionately higher for two- and four-year public institutions (about 50 percent) than for their private counterparts (i.e., ten percent of two-year private schools and 19 percent of four-year private schools). Institutional estimates of off-campus instructional use are consistent with results obtained in 1979; however, the percentages of two-year and four-year private institutions indicating use for on-campus instruction has increased about 5 percent since 1979. About one in four institutions had also employed a relatively new instructional use of video technology: pictorial enhancement of interactive programmed computer instruction.

For noninstructional uses of video, public institutions were more likely than private institutions to use video for counseling, outreach, promotion and recruitment and staff development. The use of video for each of these noninstructional purposes increased dramatically (by ten percent or more) among all types of institutions, especially four-year private schools, since 1979.

The findings on the uses of audio correspond to those for video use, although somewhat fewer institutions indicated uses of audio (Table 34). One difference stands out, however: whereas proportionately more two-year public schools (80 percent) than two-year private schools (68 percent) used audio for one-way instructional presentation to on-campus students, the situation was just the reverse in four-year schools (i.e., 75 percent of private and 69 percent of public institutions used audio for this purpose). Instructional use for on-campus students was the most common use of audio technology for all types of institutions.

While audio was used somewhat less frequently than video by institutions as a vehicle for presentation of instruction to off-campus students, it was used more frequently than video for conferencing or two-way communications between faculty and off-campus students. Even so, only about one in ten institutions indicated using audio for such purposes.

As with the use of video, public institutions were more likely than private institutions, regardless of level of offering, to use audio for noninstructional purposes, including

counseling, outreach, promotion and recruitment and staff development.

2. Video Telecourses and Audio Courses*

A total of 902 (32 percent) of institutions offered one or more video telecourses during 1984-85 and 254 (9 percent) of the institutions offered one or more audio courses. Video telecourses were offered by half of all two-year public schools and by 44 percent of the four-year public schools; in contrast, 17 percent of the private four-year and only 5 percent of the private two-year schools offered such courses (Table 35). While the differences are not as dramatic for audio courses, proportionately more public than private two- and four-year institutions also were offering these courses (Table 36).

The aggregate number of video telecourses offered over all institutions was 10,594, with almost half of these courses being offered by two-year public schools (Table 37). Among those institutions offering video telecourses, the average number of courses offered per school was about 12. Two-year private schools, on average, offered substantially fewer courses (about two per school), while professional/graduate schools typically offered many more (about 34 courses per school).

The total number of enrollments in video telecourses, over all schools, was 399,212, with nearly 90 percent of these enrollments in two- and four-year public institutions. The average enrollment per school offering video telecourses was 442 in 12 courses, for an average enrollment per course of about 38 students (ranging from nine in professional/graduate schools to 54 in four-year public institutions).

---

*These terms were defined for respondents to the Instructional Video/Audio Questionnaire as follows:

Video Telecourse -- Credit or noncredit course in which instruction makes substantial use of video technologies. A telecourse may or may not also involve substantial use of textbooks or other printed materials and regular student communication with an instructor.

Audio Course -- Credit or noncredit course in which instruction makes substantial use of audio technologies. An audio course may or may not also involve substantial use of textbooks or other printed materials and regular student communication with an instructor.

These 1984-85 estimates for video telecourses represent interesting and significant changes from the estimates obtained in the 1979 survey. First of all, there has been a substantial increase in the percentage of institutions offerings video telecourses (from 25 percent in 1979 to 32 percent in 1985, or a net increase of 167 institutions). The estimated aggregate number of institutions offering telecourses increased from 735 in 1979 to 902 in 1985, and the estimated aggregate number of telecourses offered increased from 6,884 to 10,594. On the other hand, although the average number of telecourses offered per institution increased from 9 to 12 over the six-year period, the average enrollment in these courses declined (from 75 students per course in 1979 to 38 students per course in 1985).

Table 38 presents comparable estimates of course offerings and enrollments for audio courses. The total number of audio courses offered by the 254 institutions offering such courses was 3,676, or an average of about 14 audio course offerings per school. In contrast to video telecourse offerings (where most such offerings were in public schools), the majority of audio course offerings were in four-year private institutions, which on average offered two to three times as many such courses as did two-year or public four-year institutions. However, the average enrollment per audio course in these (four-year private) institutions was 22, which was substantially smaller than the average across all schools (i.e., 38 students per course), and far below the average of 112 students per course for four-year public schools. The aggregate number of enrollments in audio courses offered by all 254 institutions was 139,750.

Table 39 lists the titles of the 25 most widely used video telecourses during the 1984-85 school year, based on the total number of institutions indicating use of these telecourses. Table 40 presents a similar list of video telecourses, based on total student enrollments over all institutions reporting use of these telecourses. The high degree of correspondence between the two list is interesting, with 20 of the 25 titles appearing in both lists.**

---

**Because of the high nonresponse and other coding difficulties associated with the telecourse listing items, estimates of the actual numbers of institutions and enrollments for individual telecourses could not be adequately determined. Also for these reasons, some minor discrepancies may exist in the rankings presented in Tables 39 and 40 (i.e., the true rank order may differ slightly from that presented). While the same problems existed for audio course titles and enrollments, most reported audio courses were local productions and typically only subject area was noted by the respondents; consequently, similar listings of audio courses could not be compiled.

To some extent, the use of video telecourses and audio courses differed by subject area. About half of all video telecourses were used in behavioral or social science instruction, whereas the primary use of audio courses was (not surprisingly) for languages and the performing arts (Table 41). The great majority of video telecourse and audio courses were at the introductory-level or lower-division courses, with two thirds or more of both types being used at this level (Table 42).

Public televsion stations were the most common distribution outlet for video telecourses offered by two- and four-year public institutions and were also used by about one third of the private institutions offering such courses (Table 43). Prerecorded videocassette or videodisc was the most frequently used form among four-year private institutions, and propportionately more of these institutions (68 percent) used this method than did two-year institutions (56 percent) or four-year public institutions (53 percent). Proportionately more public institutions, especially two-year, reported using cable television to distribute video telecourses.

Regardless of type of institution, audio courses were most frequently distributed through prerecorded audiocassette or records. About two-thirds (63 percent) of the two-year institutions and four fifths (83 percent) of the four-year institutions distributed audio courses by cassettes or records (Table 44). Public radio stations also were used by substantial numbers of public two-year (19 percent) and four-year (29 percent) institutions.

Two-year schools were more likely than four-year schools to schedule video telecourses and audio courses outside of the institution's normal hours of instruction. Table 45 shows that 73 percent of the two-year schools and 57 percent of the four-year schools used special schedules for their video telecourse offerings; the corresponding percentages for audio course offerings were 50 percent and 32 percent for two-year and four-year institutions, respectively (Table 46).

Except for four-year private institutions, most institutions offered at least some video telecourses as an alternative to parallel nonmedia courses offered for the same subjects and levels (Table 47). Proportionately more two-year institutions (85 percent) offered such choices among parallel courses than did four-year institutions (59 percent). These variations by type of school were similarly observed for schools offering audio courses (Table 48), although proportionately fewer schools of all types reported offering parallel nonaudio courses for the same subjects and levels.

Finally, almost all of the institutions offering video telecourses or audio courses during 1984-85 had, at least for

some of these courses assigned responsibility to individual instructors with whom students could interact on a regular basis. In fact, this was the procedure for every course offered in 90 percent of the two-year institutions and 85 percent of the four-year institutions offering such media courses (Table 49). The primary means of communication between students and faculty responsible for vido telecourses or audio courses at public two- and four-year institutions was by telephone or in person, whereas about two thirds of the private schools indicated that in-person meetings were the primary means of student-faculty interaction (Table 50).

3. Live, Interactive Use of Video And Audio

With the appropriate facilities and equipment, live or real-time distribution of instruction is possible for both video and audio. The institutional availability of such equipment (e.g., closed-circuit TV, ITFS transmission equipment, audio conferencing facilities) was discussed above in Section III. This survey also assessed how and how widely institutions were using such technology for instruction.

Table 51 shows that about one of four colleges and universities used live, camera-in-the-classroom television to some extent in 1984-85. Use was greatest among professional/graduate schools (42 percent), and proportionately higher among four-year public schools (33 percent) than among four-year private (23 percent) and two-year schools (24 percent). These differences corresponded to differences in availability of equipment among the institutions.

It was not possible to make precise estimates about the types of student-faculty interaction typically allowed in live camera-in-the-classroom television instruction, since significant proportions of institutional respondents answered "don't know" to such inquiries (Table 52). Nonetheless, it appears likely that more than half (and probably as many as two thirds) of the institutions offering such instruction allowed for some form of simultaneous student-faculty interaction with this instruction. Simultaneous audio and video was the most frequent form of student-faculty interaction used by all types of institutions offering such instruction. This is not surprising, since in most of the institutions offering live, camera-in-the-classroom instruction (two thirds or more), both the students and the on-camera instructor were located within the institution (Table 53).

Only about one in ten institutions used audio conferencing for instructional purposes during 1984-85, although proportionately greater numbers (20 percent) of four-year public institutions reported using such facilities and equipment for

instruction (Table 54). Here again, these findings corresponded to the institutional availability of appropriate equipment which was generally unavailable in most colleges and universities. Audio conferencing was most often not used with other interactive media (Table 55), although about one quarter of the institutions using audio conferencing indicated that it was typically used with visuals (e.g., electronic blackboard, facsimile transmission).

Tables 18 through 55
Cited in Section III: Use

Most of the tables in this section report data for 1984-85 by level of offering and control. Other parameters are identified on individual tables.

Table 18
Uses of Computers by Students, Faculty, and Administrators[a]

| Computer Uses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Students | | | | | | | | | | |
| Hands-on use in learning about computers | 99% | 94% | 98% | 98% | 95% | 96% | 63% | 98% | 93% | 96% |
| Programmed exercises, tutorials, drills | 88 | 73 | 86 | 87 | 75 | 79 | 64 | 87 | 74 | 81 |
| Instructional use of general-purpose applications software | 94 | 83 | 93 | 99 | 91 | 94 | 64 | 95 | 89 | 92 |
| Instructional communications with faculty | 13 | 5 | 12 | 39 | 27 | 31 | 21 | 23 | 24 | 23 |
| Taking exams or tests | 46 | 30 | 44 | 47 | 32 | 37 | 23 | 46 | 31 | 39 |
| Control of lab instruments, apparatus, machinery | 43 | 14 | 39 | 69 | 48 | 55 | 46 | 52 | 44 | 49 |
| Research and bibliographic | 29 | 20 | 28 | 83 | 57 | 66 | 72 | 49 | 54 | 51 |
| Faculty | | | | | | | | | | |
| Hands-on use in learning about the use of computers | 87 | 77 | 85 | 89 | 83 | 85 | 71 | 87 | 81 | 85 |
| Instructional use of general purpose applications software | 91 | 82 | 90 | 98 | 90 | 93 | 85 | 93 | 89 | 91 |
| Instructional communications with students | 14 | 5 | 13 | 41 | 31 | 34 | 26 | 24 | 27 | 25 |
| Administrative use of general-purpose applications software | 82 | 73 | 81 | 90 | 77 | 82 | 83 | 85 | 77 | 81 |



Table 18 continues

Table 18 (continued)
Uses of Computers by Students, Faculty, and Administrators[a]

| Computers Uses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Faculty (continued) | | | | | | | | | | |
| Administrative use of special- purpose software | 70 | 64 | 69 | 84 | 68 | 74 | 75 | 75 | 68 | 72 |
| Instructional management and assessment | 57 | 35 | 54 | 67 | 43 | 52 | 44 | 61 | 42 | 53 |
| Control of lab instruments, apparatus, machinery | 41 | 17 | 38 | 74 | 48 | 57 | 56 | 54 | 45 | 50 |
| Research and bibliographic | 42 | 25 | 40 | 90 | 67 | 75 | 85 | 60 | 63 | 61 |
| Administrators | | | | | | | | | | |
| Administrative use of general- purpose applications software | 83 | 75 | 82 | 88 | 84 | 86 | 83 | 85 | 83 | 84 |
| Administrative use of special- purpose software | 83 | 75 | 82 | 88 | 82 | 84 | 75 | 85 | 81 | 83 |
| Counseling | 59 | 26 | 55 | 49 | 32 | 38 | 6 | 55 | 30 | 44 |
| Outreach | 23 | 16 | 22 | 27 | 19 | 22 | 14 | 24 | 18 | 22 |
| Electronic publishing | 16 | 7 | 15 | 27 | 20 | 22 | 17 | 20 | 18 | 19 |

Table 18 continues

Table 18 (continued)
Uses of Computers by Students, Faculty, and Administrators[a]

| Computers Uses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Archiving or bulk storage of library materials in electronic form | 21 | 9 | 20 | 30 | 19 | 23 | 25 | 25 | 19 | 22 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a]As determined from Item 4 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis restricted to institutions with computers available.

Table 19
Perceived Fastest-Growing Student Use of Computers

| Fastest-Growing Student Use | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Hands-on use in learning about computers | 44% | 44% | 44% | 34% | 40% | 38% | 14% | 40% | 39% | 39% |
| Programmed exercises, tutorials, drills | 13 | 16 | 13 | 8 | 6 | 7 | 23 | 12 | 8 | 10 |
| Instructional use of general- purpose applications software | 42 | 37 | 41 | 55 | 51 | 52 | 35 | 47 | 49 | 48 |
| Instructional communications with faculty | 0 | 0 | 0 | 1 | 1 | 1 | 2 | * | 1 | 1 |
| Taking exams or tests | * | 2 | 1 | 1 | * | * | 2 | * | 1 | 1 |
| Control of lab instruments, apparatus, machinery | 0 | 0 | 0 | * | * | * | 2 | * | * | * |
| Research and bibliographic | * | 1 | 1 | 1 | 1 | 1 | 22 | 1 | 2 | 1 |
| Estimated Population Size | 855 | 133 | 988 | 508 | 875 | 1,383 | 60 | 1,375 | 1,048 | 2,431 |

[a] As determined from Item 5a of the Computers for Instruction Questionnaire. Data are percentages of insititutions.

[b] Analysis restricted to institutions where students use computers.

* Represents a positive percentage less than 0.5.

Table 20

Perceived Fastest Growing Faculty Use of Computers[a]

| Fastest-Growing Faculty Use | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Hands-on use in learning about computers | 25% | 18% | 24% | 17% | 16% | 16% | 15% | 22% | 16% | 19% |
| Instructional use of general- purpose applications software | 56 | 56 | 56 | 60 | 63 | 62 | 42 | 57 | 61 | 59 |
| Instructional communications with students | 1 | 1 | 1 | 2 | 2 | 2 | 0 | 1 | 2 | 1 |
| Administrative use of general- purpose applications software | 5 | 12 | 6 | 6 | 9 | 8 | 15 | 6 | 9 | 7 |
| Administrative use of special- purpose software | 4 | 6 | 4 | 3 | 3 | 3 | 7 | 3 | 4 | 4 |
| Instructional management and assessment | 7 | 7 | 7 | 3 | 3 | 3 | 2 | 6 | 4 | 5 |
| Control of lab instruments, apparatus, machinery | 1 | 0 | 1 | * | * | * | 5 | 1 | * | 1 |
| Research and bibliographic | 1 | 0 | 1 | 9 | 4 | 6 | 14 | 4 | 4 | 4 |
| Estimated population size | 794 | 119 | 913 | 507 | 847 | 1,354 | 70 | 1,344 | 1,059 | 2,403 |

[a] As determined from Item 5b of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions where faculty use computers

* Represents a positive percentage less than 0.5.

Table 21

Perceived Fastest Growing Administrator Use of Computers[a]

| Fastest-Growing Administrator Use | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Administrative use of general- purpose applications software | 55% | 39% | 53% | 60% | 51% | 54% | 57% | 57% | 50% | 54% |
| Administrative use of special- purpose software | 39 | 51 | 40 | 36 | 45 | 42 | 39 | 37 | 45 | 41 |
| Counseling | 4 | 2 | 4 | 2 | 2 | 2 | 0 | 3 | 2 | 2 |
| Outreach | * | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| Electronic publishing | 1 | 2 | 1 | 0 | * | * | 0 | * | 1 | 1 |
| Archiving or storage of library materials in electronic form | 1 | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| Estimated population size | 716 | 110 | 826 | 460 | 783 | 1,243 | 65 | 1,204 | 930 | 2,134 |

[a] As determined from Item 5c of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions where administrators use computers.

* Represents a positive percentage less than 0.5.

Table 22
Currently Computerized Administrative Systems[a]

| Currently Computerized System | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Course offerings | 77% | 32% | 70% | 79% | 63% | 69% | 36% | 77% | 57% | 68% |
| Standardized test scores | 24 | 13 | 22 | 50 | 25 | 33 | 21 | 34 | 23 | 29 |
| Student grade records | 91 | 48 | 84 | 93 | 77 | 82 | 60 | 91 | 72 | 82 |
| Enrollment projections | 40 | 23 | 38 | 52 | 41 | 45 | 31 | 44 | 38 | 41 |
| Student financial aid program | 57 | 35 | 54 | 71 | 58 | 62 | 31 | 62 | 53 | 58 |
| Fund raising | 13 | 29 | 16 | 46 | 59 | 55 | 40 | 26 | 54 | 39 |
| Payroll | 85 | 50 | 80 | 89 | 74 | 79 | 68 | 87 | 71 | 79 |
| Other | 22 | 19 | 21 | 15 | 23 | 20 | 18 | 19 | 22 | 20 |
| None of the above | 2 | 23 | 6 | 1 | 9 | 6 | 20 | 2 | 12 | 7 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a]As determined from Item 6 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that appl Data are percentages of institutions.

[b]Analysis based on all institutions.

Table 23
Administrative Systems Scheduled To Be Computerized Next Year[a]

| System To Be Computerized | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Course offerings | 7% | 24% | 9% | 6% | 12% | 10% | 20% | 7% | 13% | 10% |
| Standardized test scores | 16 | 18 | 17 | 9 | 12 | 11 | 5 | 13 | 13 | 13 |
| Student grade records | 5 | 28 | 8 | 4 | 9 | 7 | 12 | 5 | 11 | 7 |
| Enrollment projections | 22 | 28 | 23 | 15 | 18 | 17 | 22 | 20 | 19 | 19 |
| Student financial aid program | 22 | 36 | 24 | 15 | 18 | 17 | 27 | 19 | 21 | 20 |
| Fund raising | 28 | 22 | 27 | 25 | 17 | 19 | 15 | 26 | 17 | 22 |
| Payroll | 5 | 15 | 7 | 4 | 7 | 6 | 5 | 5 | 8 | 6 |
| Other | 7 | 7 | 7 | 9 | 6 | 7 | 3 | 8 | 6 | 7 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 6 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 24
Allocation of Computer Use[a]

| Type of Use | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Administration | 37% | 33% | 36% | 39% | 44% | 42% | 49% | 38% | 43% | 40% |
| Instruction | 60 | 63 | 60 | 46 | 47 | 47 | 23 | 54 | 48 | 51 |
| Research | 2 | 2 | 3 | 14 | 7 | 10 | 25 | 7 | 7 | 8 |
| Other | 1 | 2 | 1 | 1 | 2 | 1 | 3 | 1 | 2 | 1 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a]As determined from Item 39 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b]Analysis restricted to institutions with computers available.

Table 25

Use of Mainframe and Minicomputers With Various Peripherals[a]

| Peripherals Used | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | Public | Private | Total[b] |
| Videocassette recorders or linear-access videodisc players | 4% | 2% | 4% | 4% | 3% | 3% | 4% | 4% | 3% | 4% |
| Random-access videodisc players | 1 | 2 | 1 | 3 | 2 | 2 | 5 | 2 | 2 | 2 |
| Compact audio discs | 1 | 0 | * | 1 | * | * | 0 | 1 | * | * |
| Voice synthesizers | 3 | 0 | 3 | 7 | 2 | 4 | 2 | 5 | 2 | 4 |
| Music synthesizers | 1 | 0 | 1 | 7 | 4 | 6 | 0 | 4 | 3 | 4 |
| Videotex terminals | 4 | 5 | 4 | 7 | 3 | 5 | 2 | 6 | 3 | 5 |
| Graphics peripherals | 35 | 11 | 33 | 69 | 48 | 56 | 45 | 51 | 44 | 48 |
| None of the above | 58 | 82 | 61 | 28 | 49 | 41 | 50 | 44 | 52 | 48 |
| Estimated population size | 778 | 67 | 845 | 510 | 772 | 1,282 | 58 | 1,315 | 870 | 2,185 |

[a] As determined from Item 9 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions with mainframe or minicomputers available.

* Represents a positive percentage less than 0.5.

Table 26
Use of Microcomputers With Various Peripherals[a]

| Peripherals Used | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | Public | Private | Total[b] |
| Videocassette recorders or linear-access videodisc players | 13% | 5% | 12% | 19% | 9% | 13% | 19% | 16% | 9% | 13% |
| Random access videodisc players | 4 | 0 | 4 | 14 | 4 | 7 | 16 | 8 | 4 | 6 |
| Compact audio discs | 1 | 0 | 1 | 2 | * | 1 | 4 | 2 | * | 1 |
| Voice synthesizers | 12 | 8 | 11 | 24 | 10 | 15 | 5 | 16 | 9 | 13 |
| Music synthesizers | 13 | 5 | 12 | 33 | 20 | 25 | 7 | 21 | 17 | 19 |
| Videotex terminals | 3 | 2 | 3 | 6 | 3 | 4 | 2 | 4 | 3 | 4 |
| Graphics peripherals | 59 | 18 | 53 | 73 | 49 | 58 | 51 | 64 | 45 | 56 |
| None of the above | 34 | 77 | 40 | 18 | 41 | 32 | 39 | 28 | 45 | 36 |
| Estimated population size | 832 | 134 | 966 | 492 | 900 | 1,392 | 71 | 1,345 | 1,084 | 2,429 |

[a] As determined from Item 9 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions with microcomputers available.

* Represents a positive percentage less than 0.5.

Table 27
Courses Requiring Use of Software or Data Bases
Installed on Mainframe or Minicomputers[a]

| Courses Offered Requiring Use of Mainframe or Minicomputers | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 69% | 47% | 67% | 88% | 77% | 81% | 46% | 76% | 72% | 75% |
| Estimated population size | 778 | 67 | 845 | 510 | 772 | 1,282 | 58 | 1,315 | 870 | 2,185 |

[a] As determined from Item 12 of the Computers for Instruction Questionnaire.

[b] Analysis restricted to institutions with mainframes or minicomputers available.

Table 28

Average Number of Courses Offered which Require Use of Mainframe or Minicomputer Installed Software[a]

| No. of Courses per Institutions | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Mean | 7.81 | 3.23 | 7.47 | 31.12 | 12.95 | 20.42 | 11.60 | 17.91 | 12.39 | 15.65 |
| Median | 4.00 | 2.00 | 4.00 | 10.00 | 5.00 | 6.00 | 4.50 | 5.00 | 5.00 | 5.00 |
| Mode | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 |
| Estimated population size | 537 | 31 | 568 | 450 | 594 | 1,044 | 26 | 1,004 | 634 | 1,638 |

[a] As determined from Item 12 of the Computers for Instruction Questionnaire.

[b] Analysis restricted to institutions offering courses requiring mainframe or minicomputer installed software.

Table 29

Formal Computer Literacy Policies for Undergraduate Students[a]

| Formal Computer Literacy Policies | Two-Year | | | Four-Year | | | Total | Total | Total[b] |
|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | Public | Private | |
| No formal policy | 78% | 79% | 78% | 69% | 70% | 70% | 74% | 71% | 73% |
| For all undergraduate | 9 | 9 | 9 | 11 | 15 | 14 | 10 | 15 | 12 |
| Only for undergraduates in certain fields | 13 | 12 | 13 | 20 | 15 | 16 | 16 | 14 | 15 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 1,380 | 1,061 | 2,441 |

[a] As determined from Item 20 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions with undergraduate students and computers available.

Table 30
Undergraduate Programs of Study With Computer Literacy Requirements[a]

| Program With Computer Literacy Requirements | Two-Year | | | Four-Year | | | Total | Total | |
|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | Public | Private | Total[b] |
| Liberal arts | 20% | 15% | 20% | 9% | 9% | 9% | 14% | 10% | 12% |
| Education | 19 | 14 | 18 | 40 | 42 | 41 | 34 | 40 | 37 |
| Behavioral sciences | 9 | 0 | 7 | 13 | 16 | 15 | 12 | 15 | 13 |
| Social sciences (including history) | 9 | 0 | 8 | 11 | 11 | 11 | 10 | 11 | 11 |
| Business | 82 | 65 | 80 | 79 | 84 | 82 | 81 | 82 | 81 |
| Mathematics | 45 | 13 | 41 | 51 | 57 | 54 | 49 | 54 | 51 |
| Computer sciences | 84 | 89 | 84 | 87 | 84 | 86 | 85 | 84 | 85 |
| Life sciences | 23 | 0 | 20 | 14 | 20 | 17 | 17 | 18 | 18 |
| Physical sciences | 26 | 21 | 26 | 33 | 34 | 34 | 31 | 34 | 32 |
| Engineering | 60 | 42 | 58 | 88 | 60 | 77 | 73 | 57 | 69 |
| Design | 36 | 0 | 32 | 7 | 16 | 10 | 20 | 14 | 18 |
| Fine arts | 4 | 0 | 4 | 3 | 6 | 4 | 3 | 5 | 4 |
| Remedial basic studies (reading, math, writing) | 8 | 15 | 9 | 2 | 4 | 3 | 5 | 5 | 5 |
| Premedical or pre-dental | 7 | 0 | 7 | 11 | 9 | 10 | 10 | 9 | 9 |
| Prelaw | 6 | 0 | 5 | 6 | 4 | 5 | 6 | 4 | 5 |
| Other | 54 | 50 | 54 | 27 | 23 | 25 | 44 | 26 | 38 |
| Estimated population size | | | | | | | | | |

[a] As determined from Item 21 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions offering a particular program and with formal computer literacy policies.

Table 31

Elements of Formal Computer Literacy Policies for Undergraduate Students[a]

| Computer Literacy Policy Requires Students to: | Two-Year | | | Four-Year | | | Total | Total | Total[b] |
|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | Public | Private | |
| Take an introductory course in computers for credit | 90% | 93% | 90% | 85% | 86% | 86% | 88% | 87% | 87% |
| Be able to write a simple computer program | 57 | 68 | 59 | 65 | 61 | 63 | 61 | 62 | 62 |
| Be able to document their programming | 36 | 56 | 39 | 47 | 45 | 46 | 42 | 47 | 44 |
| Be able to test and debug simple programs | 42 | 68 | 46 | 54 | 52 | 53 | 48 | 54 | 51 |
| Know how to develop simple computer-oriented algorithms | 32 | 56 | 36 | 46 | 41 | 43 | 39 | 43 | 41 |
| Be able to document their algorithms | 21 | 36 | 23 | 35 | 34 | 34 | 28 | 35 | 31 |
| Know general operations or procedures for using canned software | 76 | 84 | 77 | 74 | 72 | 73 | 75 | 73 | 74 |
| Know what general types of problems are amenable to computer solution | 70 | 57 | 68 | 64 | 65 | 65 | 67 | 64 | 66 |
| Understand the potential use of large bodies of quantitative data in a particular field | 35 | 33 | 35 | 42 | 38 | 40 | 38 | 38 | 38 |
| Be familiar with the social implications of computer use | 62 | 63 | 63 | 49 | 53 | 52 | 56 | 54 | 55 |

Table 31 continues

Table 31 (continued)
Elements of Formal Computer Literacy Policies for Undergraduate Students[a]

| Computer Literacy Policy Requires Students to: | Two-Year | | | Four-Year | | | Total | Total | |
|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | Public | Private | Total[b] |
| Be familiar with the ethical issues associated with computer use | 65 | 63 | 65 | 54 | 57 | 56 | 60 | 58 | 59 |
| Other | 8 | 8 | 8 | 11 | 13 | 13 | 9 | 13 | 11 |
| Estimated population size | 190 | 30 | 220 | 160 | 276 | 436 | 350 | 306 | 656 |

[a]As determined from Item 22 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that appli
Data are percentages of institutions.

[b]Analysis restricted to institutions with computer literacy requirements for undergraduate students.

Table 32
Areas of Formal Policy on Computer Use[a]

| Policy Area | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Development of computer software by faculty members | 20% | 8% | 18% | 26% | 17% | 20% | 23% | 22% | 16% | 19% |
| Networking of hardware and software | 15 | 8 | 14 | 25 | 15 | 18 | 17 | 19 | 14 | 17 |
| Access to computers by faculty | 45 | 44 | 45 | 66 | 56 | 60 | 39 | 53 | 54 | 53 |
| Access to computers by students | 55 | 55 | 55 | 69 | 62 | 65 | 40 | 60 | 60 | 60 |
| Conversion of library holdings to electronic form | 12 | 8 | 11 | 19 | 14 | 16 | 17 | 14 | 13 | 14 |
| Rewiring of dormitories to accommodate computers | 1 | 2 | 1 | 14 | 9 | 11 | 0 | 6 | 8 | 7 |
| Rewiring of faculty offices to accommodate computers | 9 | 7 | 8 | 27 | 18 | 21 | 13 | 15 | 17 | 16 |
| Duplication of copyrighted software | 39 | 19 | 36 | 43 | 33 | 36 | 36 | 40 | 31 | 36 |
| Data security (loss prevention and safeguards against intrusion) | 36 | 25 | 34 | 47 | 37 | 40 | 28 | 40 | 35 | 38 |
| Privacy or confidentiality | 31 | 19 | 30 | 47 | 35 | 39 | 27 | 37 | 33 | 35 |

Table 32 continues

Table 32 (continued)
Areas of Formal Policy on Computer Use[a]

| Policy Area | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Other | 1 | 0 | 1 | 3 | 2 | 2 | 6 | 2 | 2 | 2 |
| No formal policies | 30 | 39 | 31 | 20 | 29 | 26 | 38 | 26 | 31 | 28 |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a]As determined from Item 23 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that appli
Data are percentages of institutions.

[b]Analysis restricted to institutions with computers available.

Table 33

Uses of Video Technologies[a]

| Use of Video | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| One-way presentation of instruction to students on-campus | 89% | 67% | 86% | 87% | 81% | 83% | 77% | 88% | 79% | 84% |
| One-way presentation of instruction to students off campus | 51 | 10 | 45 | 47 | 19 | 28 | 21 | 50 | 18 | 35 |
| Conferencing or two-way communications between faculty and off-campus students | 7 | 1 | 6 | 17 | 4 | 8 | 10 | 11 | 4 | 8 |
| Conferencing or two-way communications between faculty and students in multiple locations on campus | 5 | 3 | 4 | 8 | 4 | 6 | 7 | 7 | 4 | 6 |
| Pictorial enhancement of interactive programmed instruction with computers | 25 | 23 | 25 | 31 | 24 | 27 | 25 | 27 | 25 | 26 |
| Counseling | 57 | 36 | 53 | 72 | 62 | 65 | 56 | 63 | 57 | 60 |
| Outreach | 60 | 37 | 57 | 64 | 48 | 53 | 43 | 62 | 46 | 54 |
| Promotion and Recruitment | 68 | 49 | 64 | 72 | 61 | 65 | 50 | 69 | 59 | 64 |

Table 33 continues

Table 33 (continued)
Uses of Video Technologies[a]

| Use of Video | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Staff Development | 58 | 30 | 53 | 58 | 41 | 47 | 44 | 59 | 39 | 49 |
| Other | 4 | 2 | 3 | 7 | 5 | 6 | 9 | 5 | 4 | 5 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a]As determined from Item 3 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis based on all institutions.

Table 34
Uses of Audio Technologies[a]

| Use of | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| One-way presentation of instruction to students on-campus | 80% | 68% | 79% | 69% | 75% | 73% | 63% | % | 74% | 75% |
| One-way presentation of instruction to students off-campus | 37 | 15 | 33 | 31 | 18 | 22 | 15 | 34 | 17 | 27 |
| Conferencing or two-way communications between faculty and off-campus students | 12 | 4 | 11 | 21 | 7 | 12 | 7 | 16 | 6 | 12 |
| Conferencing or two-way communications between faculty and students in multiple locations on-campus | 7 | 4 | 7 | 8 | 7 | 7 | 2 | 8 | 5 | 6 |
| Sound enhancement of interactive programmed instruction with computers | 17 | 16 | 16 | 17 | 14 | 15 | 13 | 17 | 14 | 16 |
| Counseling | 36 | 32 | 35 | 47 | 40 | 44 | 20 | 42 | 38 | 39 |
| Outreach | 36 | 26 | 35 | 43 | 31 | 35 | 18 | 38 | 29 | 34 |
| Promotion/recruitment | 53 | 39 | 51 | 54 | 44 | 47 | 22 | 53 | 41 | 48 |

Table 34 continues

Table 34 (continued)
Uses of Audio Technologies[a]

| Use of Audio | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Staff development | 37 | 32 | 36 | 37 | 30 | 32 | 23 | 36 | 29 | 34 |
| Other | 1 | 2 | 1 | 4 | 3 | 3 | 6 | 2 | 3 | 3 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 35

Institutions Offering Video Telecourses[a]

| Institutions Offering Video Telecourses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage | 50% | 5% | 43% | 44% | 17% | 26% | 13% | 47% | 15% | 32% |
| Number | 462 | 9 | 471 | 236 | 180 | 416 | 14 | 702 | 200 | 902 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Items 4 and 5 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

[b] Analysis based on all institutions.

Table 36

Institutions Offering Audio Courses[a]

| Institutions Offering Audio Courses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage | 12% | 3% | 10% | 10% | 7% | 8% | 4% | 11% | 7% | 9% |
| Number | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Items 4 and 9 of the Instructional Video/Audio Questionnaire.

[b] Analysis based on all institutions.

Table 48
Audio Courses Offered With Parallel Nonmedia Courses[a]

| Parallel Nonmedia Courses Offered | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 27% | 59% | 30% | 37% | 62% | 51% | 75% | 31% | 62% | 41% |
| Yes, for every course | 41 | 41 | 40 | 20 | 23 | 21 | 0 | 34 | 24 | 30 |
| Yes, but only for some courses | 32 | 0 | 30 | 43 | 15 | 28 | 25 | 35 | 14 | 29 |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a]As determined from Item 16 of the Instructional Video/Audio Questionnaire. Date are percentages of institutions.

[b]Analysis restricted to institutions that offered audio courses.

Table 38

Audio Course Offerings and Enrollments[a]

| Audio Courses Offered and Students Enrolled | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Total no. Offered (all schools) | 943 | 67 | 1,010 | 576 | 2,065 | 2,641 | 26 | 1,543 | 2,133 | 3,676 |
| Average no. Offered per school | 9 | 10 | 9 | 10 | 26 | 20 | 7 | 9 | 25 | 14 |
| Total no. enrolled | 25,956 | 1,080 | 27,036 | 68,056 | 44,290 | 112,346 | 368 | 94,246 | 45,504 | 139,750 |
| Average no. enrolled per school | 243 | 152 | 237 | 1,154 | 575 | 826 | 91 | 559 | 532 | 550 |
| Average enrollment per course | 28 | 15 | 27 | 112 | 22 | 42 | 13 | 61 | 22 | 38 |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a] As determined from Items 9 and 10 of the Instructional Video/Audio Questionnaire.

[b] Analysis restricted to institutions offering audio courses.

| Rank Order[b] | Title of Program Series |
|---|---|
| 1 | New Literacy: An Introduction to Computers |
| 2 | Business of Management |
| 3 | Focus on Society |
| 4 | Understanding Human Behavior |
| 5 | Faces of Culture: Studies in Cultural Anthropology |
| 6 | The Growing Years |
| 7 | Personal Finance and Money Management |
| 8 | The Write Course: Introduction to College Composition |
| 9 | American Story: The Beginning to 1877 |
| 10 | Heritage: Civilization and the Jews |
| 11 | Constitution: That Delicate Balance |
| 12 | Oceanus: The Marine Environment |
| 13 | Contemporary Health Issues |
| 14 | Vietnam: A Television History |
| 15 | Project Universe: Astronomy |
| 16 | It's Everybody's Business |
| 17 | Congress: We the People |
| 18 | Humanities Through the Arts |
| 19 | American Government Survey |
| 20 | The Art of Being Human |
| 21 | Earth, Sea, and Sky |
| 22 | Money Puzzle: The World of Macroeconomics |
| 23 | Voyage: Challenge and Change in Career/Life Planning |
| 24 | Family Portrait: A Study of Contemporary Lifestyles |
| 25 | Cosmos |

[a] As determined from Item 7 of the Instructional Video/Audio Questionnaire.

[b] Ranking based on total number of institutions reporting use.

| Rank Order[b] | Title of Program Series |
|---|---|
| 1 | New Literacy: An Introduction to Computers |
| 2 | Business of Management |
| 3 | Understanding Human Behavior |
| 4 | Focus on Society |
| 5 | American Story: The Beginning to 1877 |
| 6 | The Growing Years |
| 7 | Principles of Accounting |
| 8 | Introduction to Computers |
| 9 | Faces of Culture: Studies in Cultural Anthropology |
| 10 | It's Everybody's Business |
| 11 | Contemporary Health Issues |
| 12 | The Write Course: Introduction to College Composition |
| 13 | Oceanus: The Marine Environment |
| 14 | Personal Finance and Money Management |
| 15 | American Government Survey |
| 16 | The Brain |
| 17 | Project Universe: Astronomy |
| 18 | General Biology |
| 19 | The Art of Being Human |
| 20 | Humanities Through the Arts |
| 21 | Vietnam: A Television History |
| 22 | Money Puzzle: The World of Macroeconomics |
| 23 | Earth, Sea, and Sky |
| 24 | American Government I |
| 25 | Heritage: Civilization and the Jews |

[a]As determined from Item 7 of the Instructional Video/Audio Questionnaire.

[b]Ranking based on combined total student enrollment for all institutions reporting use.

Table 41
Video Telecourse and Audio Course Offerings
By Academic Subject Area[a]

| Subject Area | Video Telecourses | Audio Courses |
|---|---|---|
| Education | 3% | 5% |
| Behavioral sciences (including psychology) | 10 | 4 |
| Social sciences (including history) | 23 | 8 |
| Business | 13 | 7 |
| Mathematics | 2 | 2 |
| Computer sciences | 9 | * |
| Life sciences | 5 | 3 |
| Physical sciences | 3 | 2 |
| Engineering | 8 | 3 |
| Design | * | 0 |
| Fine arts and performing arts | 3 | 17 |
| Remedial basic studies | * | 1 |
| Premedical or predental | * | 0 |
| Prelaw | * | 1 |
| Communications | 2 | 4 |
| English and composition (including English and Secondary Languages) | 4 | 6 |
| Foreign language | 1 | 19 |
| Health sciences | 3 | 7 |
| Library sciences | * | * |
| Philosophy | 1 | 1 |
| Recreation | * | * |
| Religion | 1 | 5 |
| Trades and services | 1 | 3 |

Table 41 continues

Table 41 (continued)
Video Telecourse and Audio Course Offerings
By Academic Subject Area[a]

| Subject Area | Video Telecourses | Audio Courses |
|---|---|---|
| Humanities (including literature) | 4 | 0 |
| General Education Degree | * | 0 |
| Other | 4 | 0 |

[a] As determined from Item 7 of the Instructional Video/Audio Questionnaire. Data are percentages of all video (video) and 11 (audio) or audio courses offered.

* Represents a positive percentage less than 0.5.

Table 42
Video Telecourse and Audio Course
Offerings Reported Level[a]

| Level of Course | Video Telecourses | Audio Courses |
|---|---|---|
| Remedial | 1% | 3% |
| Lower division | 71 | 63 |
| Upper division | 19 | 29 |
| Graduate | 9 | 5 |

[a]As determined from Items 7 of the Instructional Video/Audio Questionnaire. Data are percentages of all video (video) and 11 (audio) or audio offerings.

Table 43
Distribution Methods for Video Telecourses[a]

| Distribution Method | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Public television station | 72% | 41% | 72% | 56% | 33% | 46% | 0 | 66% | 32% | 59% |
| Commercial television station | 12 | 0 | 12 | 5 | 7 | 6 | 0 | 10 | 6 | 9 |
| Cable television | 59 | 16 | 58 | 35 | 19 | 28 | 0 | 51 | 17 | 44 |
| Campus closed-circuit system | 22 | 16 | 22 | 26 | 17 | 23 | 29 | 24 | 18 | 22 |
| Instructional Television Fixed Service (ITFS) | 9 | 0 | 9 | 15 | 9 | 12 | 11 | 11 | 9 | 11 |
| State or regional closed-circuit system | 2 | 0 | 2 | 12 | 2 | 8 | 19 | 6 | 2 | 5 |
| Prerecorded videocassette or videodisc | 57 | 43 | 56 | 53 | 68 | 59 | 30 | 55 | 65 | 57 |
| Other | 7 | 0 | 7 | 9 | 7 | 8 | 21 | 7 | 8 | 8 |
| Estimated population size | 462 | 9 | 471 | 236 | 180 | 416 | 14 | 702 | 200 | 902 |

[a] As determined from Item 8 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered video telecourses.

Table 44
Distribution Methods for Audio Courses[a]

| Distribution Method | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Public radio station | 19% | 0% | 18% | 29% | 5% | 15% | 0% | 22% | 5% | 17% |
| Commercial radio station | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 5 | 0 | 3 |
| Cable radio | 2 | 0 | 2 | 7 | 0 | 3 | 0 | 4 | 0 | 3 |
| SCA or FM subchannel | 7 | 0 | 6 | 2 | 5 | 4 | 0 | 5 | 5 | 5 |
| Prerecorded audiocassette or records | 61 | 100 | 63 | 68 | 93 | 83 | 100 | 63 | 93 | 74 |
| Other | 35 | 0 | 33 | 25 | 12 | 18 | 49 | 32 | 11 | 25 |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a]As determined from Item 12 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis restricted to institutions that offered audio courses.

Table 45
Video Telecourses Scheduled Outside Normal Hours of Instruction[a]

| Special Scheduling of Video Telecourses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 73% | 57% | 73% | 65% | 45% | 57% | 51% | 71% | 46% | 65% |
| Estimated population size | 462 | 9 | 471 | 236 | 180 | 416 | 14 | 702 | 200 | 902 |

[a] As determined from Item 13 of the Instructional Video/Audio Questionnaire.

[b] Analysis restricted to institutions that offered video telecourses.

Table 46
Audio Courses Scheduled Outside Normal Hours of Instruction[a]

| Special Scheduling of Audio Courses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 49% | 61% | 50% | 29% | 35% | 32% | 40% | 43% | 36% | 41% |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a]As determined from Item 13 of the Instructional Video/Audio Questionnaire.

[b]Analysis restricted to institutions that offered audio courses.

Table 47
Video Telecourses Offered With Parallel Nonmedia Courses[a]

| Parallel Nonmedia Courses Offered | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 15% | 29% | 15% | 31% | 56% | 41% | 79% | 21% | 55% | 28% |
| Yes, for every course | 48 | 71 | 49 | 30 | 24 | 28 | 11 | 41 | 26 | 39 |
| Yes, but only for some courses | | 37 | 0 | 36 | 39 | 20 | 31 | 10 | 38 | 19 | 33 |
| Estimated population size | 462 | 9 | 471 | 236 | 180 | 416 | 14 | 702 | 200 | 902 |

[a]As determined from Item 16 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b]Analysis restricted to institutions that offered video telecourses.

Table 48
Audio Courses Offered With Parallel Nonmedia Courses[a]

| Parallel Nonmedia Courses Offered | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 27% | 59% | 30% | 37% | 62% | 51% | 75% | 31% | 62% | 41% |
| Yes, for every course | 41 | 41 | 40 | 20 | 23 | 21 | 0 | 34 | 24 | 30 |
| Yes, but only for some courses | 32 | 0 | 30 | 43 | 15 | 28 | 25 | 35 | 14 | 29 |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a]As determined from Item 16 of the Instructional Video/Audio Questionnaire. Date are percentages of institutions.

[b]Analysis restricted to institutions that offered audio courses.

Table 49
Instructor Responsibility/Accessibility to Students in Video Telecourses or Audio Courses[a]

| Instructor Responsible/ Accessible to Students | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 4% | 0% | 4% | 3% | 11% | 7% | 0% | 4% | 10% | 5% |
| Yes, for every course | 90 | 90 | 90 | 85 | 84 | 85 | 69 | 88 | 83 | 87 |
| Yes, but only for some courses | 6 | 10 | 6 | 12 | 5 | 8 | 31 | 8 | 7 | 8 |
| Estimated population size | 480 | 15 | 495 | 240 | 190 | 430 | 15 | 724 | 216 | 940 |

[a] As determined from Item 18 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered video telecourses or audio courses.

Table 50
Primary Means of Communication With Faculty Responsible for Video Telecourses or Audio Courses[a]

| Primary Means of Communication With Faculty | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Telephone | 40% | 19% | 39% | 43% | 22% | 34% | 32% | 41% | 22% | 37% |
| In person | 42 | 62 | 43 | 43 | 68 | >4 | 60 | 42 | 67 | 48 |
| Electronic mail | 0 | 0 | 0 | 0 | 1 | * | 0 | 0 | 1 | * |
| Correspondence | 14 | 19 | 14 | 10 | 6 | 8 | 0 | 13 | 7 | 11 |
| Other | 4 | 0 | 4 | 4 | 3 | 3 | 8 | 4 | 3 | 4 |
| Estimated population size | 460 | 15 | 475 | 233 | 169 | 402 | 15 | 710 | 182 | 892 |

[a]As determined from Item 19 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis restricted to institutions that offered video telecourses or audio courses with responsible instructors accessible to participating students.

*Represents a positive percentage less than 0.5%.

Table 51

Instructional Use of Closed-Circuit TV or IVFS of the Live Camera-in-the-Classroom Type[a]

| Use of Closed-Circuit TV or Live Camera in Classroom | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 27% | 14% | 24% | 33% | 23% | 26% | 42% | 29% | 23% | 26% |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 27 of the Instructional Video/Audio Questionnaire.

[b] Analysis based on all institutions.

Table 52
Student-Faculty Interaction Associated With Courses
Employing Live Camera-in-the-Classroom TV[a]

| Kind of Student-Faculty Interaction | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No simultaneous interaction | 32% | 15% | 30% | 25% | 26% | 26% | 29% | 29% | 26% | 28% |
| On-line computer interaction | 4 | 9 | 4 | 8 | 8 | 8 | 8 | 6 | 8 | 7 |
| Simultaneous audio-only interaction | 16 | 0 | 15 | 41 | 12 | 24 | 18 | 27 | 10 | 20 |
| Simultaneous audio and video interaction | 40 | 44 | 40 | 25 | 44 | 36 | 41 | 33 | 44 | 38 |
| Don't know | 14 | 37 | 17 | 11 | 19 | 16 | 12 | 13 | 20 | 16 |
| Estimated population size | 250 | 25 | 275 | 178 | 246 | 424 | 46 | 436 | 309 | 745 |

[a] As determined from Item 28 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions reporting use of live camera-in-the-classroom TV.

Table 53

Off-Campus Location of Instructor or Students During Live Camera-in-the-Classroom Instruction[a]

| Students or Instructor Located Off-Campus | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 72% | 86% | 73% | 50% | 74% | 64% | 75% | 63% | 75% | 68% |
| Yes, on-camera instructor located elsewhere | 8 | 0 | 7 | 8 | 4 | 5 | 2 | 8 | 3 | 6 |
| Yes, some students viewing located elsewhere | 17 | 0 | 16 | 42 | 12 | 24 | 10 | 28 | 10 | 20 |
| Don't know | 8 | 14 | 9 | 5 | 13 | 10 | 15 | 7 | 14 | 10 |
| Estimated population size | 250 | 25 | 275 | 178 | 246 | 424 | 46 | 436 | 309 | 745 |

[a] As determined from Item 29 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions reporting use of live camera-in-the-classroom television.

Table 54

Use of Audio Conferencing for Instruction[a]

| Use of Audio Conferencing | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 12% | 2% | 10% | 20% | 7% | 11% | 13% | 15% | 6% | 11% |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 30 of the Instructional Video/Audio Questionnaire.

[b] Analysis based on all institutions.

Table 55

Use of Other Interactive Media in Conjunction With Audio Conferencing for Instruction[a]

| Use of Other Interactive Media with Audio Conferencing | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 63% | 32% | 62% | 54% | 59% | 56% | 34% | 57% | 56% | 57% |
| Yes, with visuals (e.g., electronic blackboard, facsimile transmission) | 20 | 34 | 21 | 30 | 27 | 29 | 50 | 26 | 29 | 27 |
| Yes, computer conferencing | 8 | 0 | 7 | 10 | 4 | 8 | 8 | 9 | 3 | 8 |
| Don't know | 12 | 34 | 13 | 10 | 11 | 11 | 16 | 12 | 11 | 12 |
| Estimated population size | 110 | 3 | 113 | 105 | 75 | 180 | 14 | 226 | 81 | 307 |

[a] As determined from Item 31 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions that used audio conferencing for instruction.

## V. SUPPORT FOR INSTRUCTIONAL TECHNOLOGY

This section examines various aspects of institutional support for instructional use of each of the three major types of technology, including (1) consortium* memberships, as well as services provided by and satisfaction with consortia; (2) faculty training and other expert assistance provided by institutions to facilitate instructional use of technology; (3) institutional policies, procedures and incentives relating to introductory technology; (4) decisionmaking responsibility; and (5) expectations for future use and financial support.

### A. Consortium Membership

About one third of all colleges and universities belonged to a computer consortium during 1984-85. More public than private schools were members of computer consortia (40 percent versus 29 percent), and among public schools, proportionately more four-year (49 percent) than two-year (34 percent) institutions belonged to such consortia (Table 56). Most schools had been members of the consortium for at least five years (Table 57), and although three fourths of these institutions reported satisfaction with the services provided (Table 58), almost all (95 percent) indicated that they planned to retain membership in the consortium for the next three years (Table 59).

The services provided by computer consortia typically included group hardware and software purchases, software evaluation and distribution, training services and a number of others (Table 60). Interestingly, the most frequently named service by four-year public institutions (60 percent) was large mainframe computer access, which was indicated by about one third of the four-year private and two-year schools.

Institutional membership in video consortia (Table 61) was comparable to that for computer consortia, with 35 percent of all institutions reporting such formal or informal arrangements for video in 1984-85. This represents a slight increase from the 28 percent found in 1979. Proportionately more public schools (46 percent) than private schools (22 percent) indicated membership. In contrast to computer consortia, however, higher percentages of two-year public institutions (48 percent) than four-year public institutions (42 percent) were members of a video consortium. Relatively few institutions (9 percent) reported membership in an audio consortium (Table 62), and many of these consortia provided both video and audio services to their members.

---

*For this study, consortium was defined as any formal or informal cooperative arrangement of colleges and organizations offering, producing or sharing services or materials.

As for computer consortia, most institutions had been members of a video consortium for five years or longer (Table 63), about three fourths of these institutions (72 percent) indicated satisfaction with the services provided (Table 64), and almost all (98 percent) intended to remain members for the next three years (Table 65).

The most frequently named service provided by video consortia was group buying or acquisition of program rights, which was noted by 78 percent of the two-year schools and 60 percent of the four-year schools (Table 66). Other services frequently named by these institutions were television program previews (especially likely for two-year schools) and television program exchanges (named by about half of both two- and four-year schools).

B. Training and Expert Assistance

1. Computers

Lack of training or expert assistance has been cited as a major barrier to effective faculty use of computers for instruction. This study found that 63 percent of the two- and four-year institutions offered some training for faculty in the instructional use of computers during 1984-85, with proportionately more public (67 percent) than private (57 percent) institutions offering such training (Table 67). The training offered by these institutions almost always involved training in the operation of equipment and of canned software; other types of training were far less likely to have been provided (Table 68).

Almost four out of five institutions reported that other institutional faculty conducted some or all of the faculty training in computers. While this was the most common resource used in two-year institutions (85 percent) and four-year private institutions (75 percent), public four-year institutions were even more likely (79 percent) to employ other institutional staff for such training (Table 69). About one out of five institutions involved user groups from within the institution or the equipment manufacturer's representatives in training faculty. On the average, faculty training in computers offered by institutions typically ran from 10 to 15 hours, regardless of type of institution (Table 70).

Aside from offering specific training for faculty, more than half (57 percent) of all institutions provided organized expert assistance (e.g., special staff or faculty committees) to faculty who wished to use computers for instructional purposes (Table 71). Proportionately more four-year public institutions (72 percent) provided such expert assistance than four-year private or two-year institutions (about 55 percent). Again, the most frequently provided type of expert assistance, by all

institutions, was in the operation of equipment, followed by assistance in software evaluation.

2. Video

The findings for faculty training in the use of video for instruction paralleled those for computers, although institutional training offered to faculty in video use was generally somewhat less extensive. Table 72 shows that 55 percent of all institutions offered formal training to faculty in the use of video technologies and another 5 percent offered informal training. The percentage of institutions offering either formal or informal training in the use of video was substantially higher for two- and four-year public institutions (about 70 percent) than for private four-year (55 percent) or two-year (29 percent) institutions.

Regardless of type of institution, offerings of faculty training in the use of video technology were typically rather short, from two to seven hours on the average (Table 73), and most frequently (in about nine out of ten institutions) involved training in the operation of equipment (Table 74). From one third to one half of the institutions also reported one or more other elements of faculty training of video for instruction, including program design and production, program selection, and integration of video with curriculum content and instructional methods.

Beyond training, three out of four institutions provided some organized expert assistance to faculty wanting to use video for instruction (Table 75). As for computers, such assistance was most likely to be available in public four-year institutions (83 percent) and least likely to be found in private two-year schools (51 percent). When expert assistance was available, it was most likely to take the form of technical assistance in the operation of equipment (95 percent of institutions); however, more than half of these institutions also provided assistance to faculty in acquiring rights to use programs and/or in evaluating program materials.

C. Institutional Policies and Procedures

Providing ready access to computer equipment for all faculty and students desiring such access is a formidable problem for most institutions. Consequently, many institutions were offering assistance, either directly or through arrangements with outside vendors, to faculty, students or both in buying computer hardware. When offered, this assistance took the form of discount prices, loans, grants or group purchase arrangements. Table 76 shows that two thirds of all colleges and universities were providing such financial assistance to students or faculty in 1984-85. Almost four out of five public four-year

institutions were providing assistance in purchasing hardware, whereas about half of all other institutions provided this assistance. Such assistance was most often offered to both faculty and students, although substantial numbers of institutions restricted assistance to faculty only.

A number of institutions offered special incentives to faculty for developing new computer programs, but this was still the exception rather than the rule in 1984-85. As Table 77 shows, only 27 percent of colleges and universities offered such incentives. When offered, incentives most often involved institutional assistance in contract or grant applications and clerical support. Two-year institutions were more likely to offer reduced teaching loads for faculty, whereas four-year institutions were more likely to offer faculty share in the royalties or allow faculty to retain the rights to programs they develop.

About half of the institutions offering video telecourses reported that they received either discounted or free program time for distributing these courses from a broadcast or cable outlet (Table 78). In most cases, free time was provided through community cable access channels. In contrast, only 15 percent of the institutions offering audio courses indicated that free or discounted broadcast time was provided for them (Table 79).

The majority of institutions indicated that tuition and fees for both video telecourses and audio courses were generally about the same as those charged for nonmedia courses. Of the remaining institutions, however, greater percentages indicated that video telecourses were more costly (Table 80) and audio courses were generally less costly (Table 81).

Although about half of the institutions offering mediated courses (video or audio) publicized these offerings for students by explicitly identifying them as such in the institution's catalog or schedule of courses (Table 82), this was somewhat more likely to be the procedure in two-year schools (63 percent) than in four-year schools (39 percent). Although relatively few of the institutions (15 percent) made any effort to distinguish between credits earned from mediated courses and credits earned through traditional nonmedia courses on students' transcripts, about twice the percentage of four-year schools (22 percent) as two-year schools (11 percent) did make this distinction (Table 33).

More than four out of five colleges and universities had no special policy on the transfer of video telecourse or audio course credits earned elsewhere (Tables 84 and 85). However, while less than 10 percent of the public two- and four-year schools did not normally accept credits earned elsewhere through media courses, about 25 percent of the private two- and four-

year schools and almost half of the professional/graduate schools indicated such a policy restricting the transfer of telecourse credits. Interestingly, only about 4 percent of all institutions, regardless of type, reported a policy restricting the use of telecourse credits for a student's major field of study (Tables 86 and 87).

## D. Decisionmaking Responsibility

Other indications of institutional commitment to and support of instructional technology may be found in the existence of individuals or groups whose assigned role is planning and needs assessment for the institutional uses of these technologies and decision making on areas relevant to instructional technology acquisition and use.

In 1984-85, about two thirds of all institutions had a task force, study group or individual administrator designated to look into the best uses and necessary technical facilities for use of audio, video and computers for instructional purposes (Table 88). Although no attempt was made to assess the stature or decision-making authority of these individuals and groups at the institutions, their existence suggests that the majority of institutions are concerned about how to integrate these technologies.

### 1. Computers

Table 89 shows who has primary responsibility for making decisions about computer acquistion and use and reveals interesting patterns of responsibility across institutions. First, it appears that Boards of Trustees seldom assume primary responsibility for any computer-related decisions made by the institutions. Decisions about the acquisition of mainframe or minicomputer hardware and charges for the use of such equipment were most likely to be made by the institution's administrative officer, whereas the academic officer was most likely to be the person responsible for planning faculty training in instructional computer use or for establishing any special incentives for faculty who develop programs. Decisions about the selection of microcomputer hardware and course-specific or microcomputer software selection were typically relegated to departmental-level personnel (i.e., department head, faculty). Most typically, computer center staff were responsible for representing the institution in consortium matters and in selecting general use software for the institution's mainframes and minicomputers.

### 2. Video and Audio

The pattern of decisionmaking responsibility for video and audio technologies is shown in Table 90. The decisionmaking structure in institutions for video and audio was quite different

from that for computers. The most striking difference is that decisions were far more likely to involve the institution's Academic Officer and less likely to be made by departmental-level staff. The academic officer was the most frequently named decisionmaker for all matters related to media courses, including determining telecourse offerings, assigning faculty to telecourses, establishing budgets for telecourses, determining telecourse transferability, and representing the institution in video and audio consortium decisionmaking. Only in the matter of establishing student tuition and fees for telecourses was the Board of Trustees likely to have responsibility rather than the academic officer. Other areas of decision making were more likely to be the responsibility of specialized audio and video staff, including planning faculty training, budgeting for video and audio equipment purchase, selecting equipment and placing or providing access to equipment.

E. Future Plans And Expectations For Use and Support

Unfortunately, a substantial number of survey respondents answered "don't know" to inquiries about future funding and expenditures for computers, video and audio technologies. Nonetheless, some useful information was obtained.

1. Computers

Table 91 shows that most respondents expected institutional funding for computers from all sources to remain the same or increase over the next two years. Similarly, the majority of institutions reported expectations that computer-related expenditures, particularly for software, would increase over the next two years (Table 92).

2. Video

Although more institutions expected video and audio funds from all sources to increase rather than decrease over the next two years, the majority of institutions expected funding to remain about the same (Table 93). This finding is somewhat inconsistent with institutions' two-year expectations for video and audio expenditures (Table 94); proportionately more institutions expected expenditures for video equipment and program materials to increase over the next two years than expected such expenditures to remain the same; just the reverse was found for audio expenditures.

About one third of all institutions planned to expand the on-campus use of video telecourses over the next two years, and one fourth of the institutions expected to expand off-campus use of telecourses (Table 95). Proportionately more two-year schools than four-year schools indicated plans for both on-campus and off-campus expansion of video telecourses. About two thirds of

the institutions offering video telecourses during 1984-85, regardless of type of institution, expected their enrollments in these courses to increase over the next two years (Table 96).

3. Audio

Institutions' expectations for the expansion of audio courses and audio course enrollments were somewhat lower. As shown in Table 97, 80 percent or more of all institutions expected the use of audio courses (both on- and off-campus) at their institution to remain about the same over the next two years, although about half of the institutions currently offering audio courses expected enrollments in such courses to increase during this period (Table 98).

Tables 56 through 98
Cited in Section IV: Support

Most of the tables in this section report data for 1984-85 by level of offering and control. Other parameters are identified on individual tables.

Table 56
Membership in Computer Consortia[a]

| Consortium Membership | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 34% | 17% | 31% | 49% | 31% | 37% | 30% | 40% | 29% | 34% |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a]As determined from Item 14 of the Computers for Instruction Questionnaire.

[b]Analysis based on all institutions.

Table 57
Years of Membership in Consortium[a]

| Years of Membership | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Mean | 5.93 | 3.53 | 5.73 | 8.55 | 6.04 | 7.12 | 4.58 | 7.09 | 5.72 | 6.54 |
| Median | 5.00 | 2.00 | 4.00 | 8.00 | 4.00 | 5.00 | 4.00 | 6.00 | 4.00 | 5.00 |
| Mode | 2 | 1 | 2 | 10 | 1 | 2 | 2 | 2 | 2 | 2 |
| Estimated population size | 315 | 30 | 345 | 265 | 333 | 598 | 33 | 593 | 383 | 976 |

[a]As determined from Item 15 of the Computers for Instruction Questionnaire.

[b]Analysis based on institutions that were members of computer consortia.

Table 58
Satisfaction with Consortium in Meeting Computer Needs[a]

| Satisfied with Consortium | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 78% | 70% | 77% | 75% | 73% | 74% | 74% | 77% | 73% | 75% |
| Estimated population size | 315 | 30 | 345 | 265 | 333 | 598 | 33 | 593 | 383 | 976 |

[a]As determined from Item 16a of the Computers for Instruction Questionnaire.

[b]Analysis restricted to institutions that were members of computer consortia.

Table 59

Plans to Remain in Computer Consortium for Next Three Years[a]

| Plans to Retain Consortium Membership for Next Three Years | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 96% | 96% | 96% | 94% | 95% | 94% | 93% | 95% | 95% | 95% |
| Estimated population size | 315 | 30 | 345 | 265 | 333 | 598 | 33 | 593 | 383 | 976 |

[a] As determined from Item 16b of the Computers for Instruction Questionnaire.

[b] Analysis restricted to institutions that were members of computer consortia.

Table 60
Services Provided by Computer Consortium[a]

| Consortium Services | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Group hardware buying | 55% | 44% | 54% | 47% | 55% | 52% | 32% | 51% | 53% | 52% |
| Group software buying | 57 | 44 | 56 | 53 | 42 | 47 | 37 | 55 | 42 | 50 |
| Software evaluation | 61 | 43 | 60 | 45 | 39 | 41 | 32 | 53 | 38 | 47 |
| Distribution of software developed by members | 55 | 39 | 53 | 50 | 41 | 45 | 41 | 52 | 41 | 48 |
| Assistance in networking hardware | 39 | 8 | 36 | 43 | 27 | 34 | 27 | 40 | 25 | 34 |
| Providing instructional or training services | 59 | 52 | 58 | 48 | 39 | 43 | 41 | 53 | 41 | 48 |
| Cross-registration for computer courses | 7 | 18 | 8 | 6 | 11 | 8 | 5 | 6 | 11 | 8 |
| Library-related services | 22 | 31 | 22 | 36 | 29 | 32 | 32 | 28 | 30 | 29 |
| Mainframe computer access | 34 | 12 | 32 | 60 | 33 | 45 | 18 | 46 | 30 | 40 |
| Other | 10 | 13 | 11 | 7 | 17 | 13 | 13 | 9 | 16 | 12 |
| Estimated population size | 315 | 30 | 345 | 265 | 333 | 598 | 33 | 593 | 383 | 976 |

[a] As determined from Item 17 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions that were members of computer consortia.

Table 61
Membership in Video Consortia[a]

| Consortium Membership | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 48% | 17% | 43% | 42% | 23% | 29% | 30% | 46% | 22% | 35% |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 36 of the Instructional Video/Audio Questionnaire.

[b] Analysis based on all institutions.

Table 62
Membership in Audio/Radio Consortia[a]

| Consortium Membership | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 11% | 8% | 11% | 12% | 7% | 8% | 5% | 11% | 7% | 9% |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 40 of the Instructional Video/Audio Questionnaire.

[b] Analysis based on all institutions.

Table 63

Length of Membership in Video Consortium[a]

| Years of Membership | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Mean | 6.33 | 5.41 | 6.27 | 6.84 | 6.62 | 6.72 | 6.29 | 6.49 | 6.48 | 6.49 |
| Median | 5.00 | 3.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| Mode | 5 | 1 | 5 | 5 | 3 | 5 | 1 | 5 | 1 | 5 |
| Estimated population size | 444 | 31 | 475 | 226 | 245 | 471 | 33 | 686 | 293 | 979 |

[a] As determined from Item 37 of the Instructional Video/Audio Questionnaire.

[b] Analysis restricted to institutions that were members of video consortia.

Table 64

Satisfaction with Consortium in Meeting Television-Related Needs[a]

| Satisfied with Consortium | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 83% | 60% | 82% | 69% | 59% | 64% | 56% | 78% | 59% | 72% |
| Estimated population size | 444 | 31 | 475 | 226 | 245 | 471 | 33 | 686 | 293 | 979 |

[a] As determined from Item 38a of the Instructional Video/Audio Questionnaire.

[b] Analysis restricted to institutions that were members of video consortia.

Table 65

Plans to Remain in Video Consortium for Next Three Years[a]

| Plan to Retain Consortium Membership for Next Three Years | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 98% | 100% | 98% | 98% | 98% | 98% | 97% | 98% | 98% | 98% |
| Estimated population size | 444 | 31 | 475 | 226 | 245 | 471 | 33 | 686 | 293 | 979 |

[a] As determined from item 38b of the Instructional Video/Audio Questionnaire.

[b] Analysis restricted to institutions with video consortium membership.

Table 66
Services Provided by Video Consortium[a]

| Consortium Services | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | Public | Private | Total[b] |
| Television program previews | 73% | 26% | 70% | 57% | 35% | 46% | 43% | 67% | 35% | 58% |
| Television program exchange | 52 | 51 | 52 | 48 | 53 | 51 | 39 | 51 | 52 | 51 |
| Staff or faculty exchange | 12 | 10 | 12 | 9 | 14 | 12 | 8 | 10 | 14 | 11 |
| Original productions | 38 | 19 | 37 | 38 | 34 | 36 | 49 | 38 | 33 | 37 |
| Staff or faculty development | 36 | 32 | 36 | 28 | 28 | 28 | 32 | 33 | 29 | 32 |
| Group buy/acquisition (program rights) | 80 | 45 | 78 | 66 | 53 | 60 | 35 | 74 | 51 | 68 |
| Other | 14 | 19 | 14 | 20 | 19 | 19 | 19 | 16 | 19 | 17 |
| Estimated population size | 444 | 31 | 475 | 226 | 245 | 471 | 33 | 686 | 293 | 979 |

[a] As determined from Item 39 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions that were members of video consortia.

Table 67
Faculty Training in the Instructional Use of Computers[a]

| Faculty Training Offered | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 65% | 55% | 64% | 71% | 58% | 63% | 42% | 67% | 57% | 63% |
| Estimated population size | 863 | 140 | 1,003 | 517 | 921 | 1,438 | 77 | 1,403 | 1,115 | 2,518 |

[a] As determined from Item 29 of the Computers for Instruction Questionnaire.

[b] Analysis restricted to institutions with computers available.

Table 68
Faculty Training offered in the Instructional Use of Computers[a]

| Types of Training Offered | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Operation of equipment | 92% | 97% | 93% | 91% | 91% | 91% | 93% | 92% | 92% | 92% |
| Operation of canned software | 93 | 94 | 93 | 93 | 92 | 93 | 90 | 93 | 92 | 93 |
| Selection of software | 45 | 38 | 44 | 42 | 32 | 36 | 36 | 44 | 33 | 39 |
| Integration of student computer use with general instructional objectives | 40 | 49 | 41 | 35 | 36 | 35 | 40 | 38 | 37 | 38 |
| Production or design of software | 21 | 15 | 20 | 24 | 20 | 21 | 30 | 22 | 20 | 21 |
| Use of computers for instruction management and testing | 44 | 35 | 43 | 38 | 27 | 31 | 36 | 41 | 28 | 36 |
| General instructional methods | 39 | 38 | 39 | 35 | 29 | 31 | 39 | 37 | 30 | 34 |
| Estimated population size | 561 | 78 | 639 | 368 | 535 | 903 | 32 | 940 | 634 | 1,574 |

[a] As determined from Item 30 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions that offer faculty training in the use of computers for instruction.

Table 69
Sources of Faculty Training in the
Instructional use of Computers[a]

| Sources of Training | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Instructors from institution faculty | 86% | 81% | 85% | 75% | 74% | 74% | 54% | 81% | 74% | 78% |
| Instructors from institution staff | 49 | 35 | 47 | 79 | 55 | 65 | 60 | 61 | 53 | 57 |
| User groups from within the institution | 18 | 8 | 17 | 25 | 15 | 19 | 22 | 21 | 14 | 18 |
| Consortia staff | 8 | 2 | 7 | 6 | 3 | 4 | 7 | 7 | 3 | 6 |
| Manufacturer's representatives | 23 | 15 | 22 | 20 | 13 | 16 | 25 | 22 | 13 | 18 |
| Software producer's representatives | 15 | 8 | 14 | 13 | 7 | 9 | 11 | 14 | 7 | 11 |
| Outside consultants | 18 | 20 | 18 | 12 | 13 | 13 | 18 | 16 | 14 | 15 |
| Other | 5 | 2 | 4 | 10 | 6 | 8 | 15 | 7 | 6 | 7 |
| Estimated population size | 561 | 78 | 639 | 368 | 535 | 903 | 32 | 940 | 634 | 1,574 |

[a] As determined from Item 31 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions that offer faculty training in the use of computers for instruction.

Table 70
Hours of Faculty Training in the Instructional Use of Computers[a]

| Hours of Training | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Mean | 16.30 | 13.81 | 16.03 | 13.50 | 14.00 | 13.79 | 9.02 | 15.13 | 13.85 | 14.61 |
| Median | 10.00 | 8.00 | 10.00 | 8.00 | 8.00 | 8.00 | 8.00 | 10.00 | 8.00 | 10.00 |
| Mode | 10 | 6 | 10 | 3 | 4 | 4 | 8 | 10 | 4 | 10.00 |
| Estimated population size | 561 | 78 | 639 | 368 | 535 | 903 | 32 | 940 | 634 | 1,574 |

[a] As determined from Item 32 of the Computers for Instruction Questionnaire.

[b] Analysis restricted to institutions that offer faculty training in the instructional use of computers.

Table 71

Types of Expert Assistance Available
to Faculty Who Wish to Use Computers for Instruction[a]

| Assistance Offered in: | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| None[b] | 43% | 61% | 46% | 28% | 45% | 39% | 56% | 37% | 48% | 43% |
| Estimated population size[b] | | | | | | | | | | |
| Evaluation of software[c] | 42 | 21 | 39 | 45 | 36 | 39 | 27 | 43 | 33 | 39 |
| Acquisition of rights to use software | 28 | 8 | 25 | 34 | 25 | 28 | 15 | 30 | 23 | 26 |
| Operation of equipment[c] | 55 | 40 | 52 | 68 | 54 | 59 | 38 | 60 | 51 | 56 |
| Integration of student computer use with general instructional objectives[c] | 24 | 13 | 22 | 29 | 22 | 25 | 12 | 26 | 20 | 23 |
| Use of computers for instructional management and testing | 29 | 16 | 27 | 31 | 18 | 23 | 20 | 30 | 18 | 25 |
| Estimated population size[c] | | | | | | | | | | |

[a]As determined from Item 33 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis based on all institutions.

[c]Analysis restricted to institutions reporting the availability of expert assistance for faculty.

Table 72
Faculty Training Offered in Use of Video for Instruction[a]

| Faculty Training Offered | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 32% | 71% | 38% | 29% | 45% | 40% | 56% | 31% | 49% | 40% |
| Yes, formal, structured training | 6 | 2 | 5 | 8 | 5 | 6 | 2 | 7 | 4 | 5 |
| Yes, informal training | 62 | 27 | 57 | 63 | 50 | 54 | 42 | 62 | 47 | 55 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 32 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 73
Length of Faculty Training in the Instructional Use of Video[a]

| Hours of Training | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Mean | 4.56 | 4.38 | 4.55 | 5.48 | 8.66 | 7.43 | 7.65 | 5.02 | 8.15 | 6.25 |
| Median | 2.00 | 2.00 | 2.00 | 3.00 | 2.00 | 2.00 | 2.50 | 2.00 | 2.00 | 2.00 |
| Mode | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 |
| Estimated population size | 631 | 53 | 684 | 384 | 590 | 974 | 46 | 1,026 | 678 | 1,704 |

[a]As determined from Item 34 of the Instructional Video/Audio Questionnair.

[b]Analysis restricted to institutions that offered faculty training in the use of video for instruction.

Table 74
Types of Faculty Training in the Instructional Use of Video[a]

| Types of Faculty Training Offered | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Selection of video/TV programs for use in instruction | 41% | 39% | 41% | 40% | 36% | 38% | 33% | 40% | 37% | 39% |
| Production or design of video/TV programs for use in instruction | 43 | 27 | 42 | 58 | 41 | 47 | 43 | 49 | 39 | 45 |
| Integration of video with overall curriculum content | 37 | 21 | 36 | 43 | 36 | 38 | 26 | 39 | 34 | 37 |
| Integration of video with overall instructional methods | 42 | 27 | 41 | 51 | 39 | 43 | 31 | 45 | 37 | 42 |
| General instructional methods | 44 | 40 | 44 | 49 | 41 | 44 | 54 | 46 | 41 | 44 |
| Operation of equipment | 85 | 97 | 86 | 85 | 93 | 90 | 77 | 84 | 93 | 88 |
| Estimated population size | 631 | 53 | 684 | 384 | 590 | 974 | 46 | 1,026 | 678 | 1,704 |

[a]As determined from Item 33 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis restricted to institutions that offered faculty training in the instructional use of video.

Table 75
Types of Expert Assistance Offered to Faculty Using Video for Instruction[a]

| Assistance Offered in: | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| None[b] | 22% | 49% | 26% | 17% | 33% | 28% | 33% | 20% | 36% | 27% |
| Evaluation of program materials[c] | 54 | 47 | 53 | 49 | 34 | 40 | 43 | 52 | 36 | 45 |
| Acquisition of rights to use program materials[c] | 63 | 50 | 62 | 59 | 46 | 51 | 38 | 61 | 46 | 55 |
| Operation of equipment[c] | 93 | 95 | 93 | 94 | 97 | 96 | 92 | 94 | 97 | 95 |
| Integration of student video use with overall curriculum content[c] | 31 | 22 | 30 | 37 | 26 | 30 | 20 | 33 | 25 | 30 |
| Integration of student video use with overall instructional methods[c] | 36 | 19 | 34 | 44 | 30 | 35 | 29 | 39 | 28 | 35 |
| Other assistance[c] | 8 | 4 | 7 | 13 | 7 | 9 | 12 | 10 | 7 | 9 |

[a] As determined from Item 35 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis based on all institutions.

[c] Analysis restricted to institutions that provide expert assistance to faculty using video for instruction.

Table 76
Assistance Offered to Faculty or Students
in Purchasing Computer Hardware[a]

| Hardware Purchasing Assistance | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| None | 50% | 72% | 54% | 22% | 45% | 37% | 44% | 39% | 49% | 44% |
| To students only | * | 1 | * | 0 | 1 | 1 | 1 | * | 1 | 1 |
| To faculty only | 23 | 13 | 21 | 13 | 19 | 17 | 14 | 19 | 17 | 18 |
| To both faculty and students | 27 | 14 | 25 | 65 | 35 | 46 | 41 | 42 | 33 | 37 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 24 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

* Represents a positive percentage less than 0.5.

Table 77
Faculty Incentives to Develop Computer Programs[a]

| Incentive | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No special incentives[b] | 72% | 87% | 75% | 62% | 76% | 71% | 75% | 68% | 78% | 73% |
| Share in royalties[c] | 22 | 21 | 22 | 53 | 33 | 42 | 33 | 36 | 31 | 34 |
| Retain rights to programs[c] | 28 | 45 | 29 | 48 | 54 | 51 | 39 | 37 | 52 | 43 |
| Reduced course load[c] | 44 | 27 | 43 | 26 | 20 | 22 | 14 | 36 | 20 | 29 |
| Assistance in obtaining grants or contracts[c] | 44 | 28 | 43 | 52 | 47 | 49 | 20 | 47 | 44 | 46 |
| Legal assistance[c] | 7 | 0 | 6 | 24 | 12 | 18 | 28 | 15 | 12 | 14 |
| Clerical/logistical support[c] | 46 | 11 | 43 | 44 | 41 | 43 | 38 | 45 | 38 | 42 |
| Additional compensation | 22 | 11 | 21 | 6 | 10 | 8 | 5 | 15 | 10 | 13 |
| Other[c] | 7 | 11 | 7 | 5 | 9 | 7 | 14 | 6 | 10 | 7 |

[a] As determined from Item 28 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis based on all institutions.

[c] Analysis restricted to institutions that provide some faculty incentive.

Table 78
Discounted or Free Broadcast Time From Outlet for Video Telecourses[a]

| Discounted/Free Broadcast Time Received | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 42% | 100% | 43% | 51% | 74% | 61% | 91% | 45% | 76% | 52% |
| Yes, free broadcast time | 23 | 0 | 23 | 24 | 9 | 18 | 0 | 23 | 9 | 20 |
| Yes, reduced-cost broadcast time | 8 | 0 | 8 | 5 | 3 | 4 | 0 | 7 | 3 | 6 |
| Yes, cable access channel(s) | 45 | 0 | 44 | 36 | 19 | 29 | 9 | 42 | 17 | 37 |
| Estimated population size | 462 | 9 | 471 | 236 | 180 | 416 | 14 | 702 | 200 | 902 |

[a] As determined from Item 15 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered video telecourses.

Table 79
Discounted or Free Broadcast Time From Outlet for Audio Courses[a]

| Discounted/Free Broadcast Time Received | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 85% | 100% | 86% | 76% | 89% | 83% | 100% | 82% | 90% | 85% |
| Yes, free broadcast time | 10 | 0 | 9 | 16 | 8 | 11 | 0 | 12 | 7 | 10 |
| Yes, reduced-cost broadcast time | 2 | 0 | 2 | 2 | 0 | 1 | 0 | 2 | 0 | 1 |
| Yes, cable access channel(s) | 4 | 0 | 4 | 8 | 3 | 5 | 0 | 5 | 3 | 5 |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a]As determined from Item 15 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis restricted to institutions that offered audio courses.

Table 80
Tuition and Fees for Video Telecourses Relative to Nonmedia Courses[a]

| Tuition and Fees for Video Telecourses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Generally higher | 9% | 19% | 9% | 17% | 9% | 14% | 13% | 12% | 9% | 12% |
| Generally about the same | 89 | 65 | 89 | 80 | 78 | 80 | 87 | 86 | 79 | 84 |
| Generally lower | 2 | 16 | 2 | 3 | 13 | 6 | 0 | 2 | 12 | 4 |
| Estimated population size | 462 | 9 | 471 | 236 | 180 | 416 | 14 | 702 | 200 | 902 |

[a]As determined from Item 20 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b]Analysis restricted to institutions that offered video telecourses.

Table 81

Tuition and Fees for Audio Courses Relative to Nonmedia Courses[a]

| Tuition and Fees for Audio Courses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Generally higher | 0% | 0% | 0% | 2% | 5% | 4% | 0% | 1% | 6% | 2% |
| Generally about the same | 98 | 74 | 96 | 93 | 85 | 88 | 66 | 95 | 83 | 92 |
| Generally lower | 2 | 26 | 4 | 5 | 10 | 8 | 34 | 4 | 11 | 6 |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a]As determined from Item 20 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b]Analysis restricted to institutions that offered audio courses.

Table 82
Video Telecourses or Audio Courses Explicitly Identified in Catalog/Schedule of Courses[a]

| Video and Audio Courses Identified | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 64% | 48% | 63% | 47% | 31% | 39% | 25% | 58% | 32% | 52% |
| Estimated population size | 480 | 15 | 495 | 240 | 190 | 430 | 15 | 724 | 216 | 940 |

[a] As determined from Item 21 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered video telecourses or audio courses or both.

Table 83
Video Telecourses and Audio Courses Distinguished From Other Courses on Student Transcripts[a]

| Video and Audio Courses Identified on Transcripts | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 10% | 40% | 11% | 18% | 29% | 22% | 0% | 12% | 29% | 15% |
| Estimated population size | 307 | 7 | 314 | 112 | 60 | 172 | 4 | 420 | 70 | 490 |

[a] As determined from Item 22 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions that explicitly identify video telecourses or audio courses in the catalog or schedule of courses.

Table 84
Policies on Transfer of Video Telecourse Credits[a]

| Policy on Video Telecourse Credits Earned Elsewhere | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Not normally accepted | 4% | 25% | 7% | 9% | 24% | 18% | 46% | 7% | 25% | 15% |
| Normally accepted | 54 | 20 | 49 | 31 | 16 | 22 | 10 | 45 | 16 | 32 |
| Recognized on case-by-case or department-by-department basis | 42 | 55 | 44 | 60 | 60 | 60 | 44 | 48 | 59 | 53 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 25 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 85

Policies on Transfer of Audio Course Credits[a]

| Policy on Audio Course Credits Earned Elsewhere | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Not normally accepted | 8% | 26% | 11% | 11% | 26% | 21% | 48% | 10% | 27% | 18% |
| Normally accepted | 45 | 14 | 40 | 26 | 13 | 18 | 11 | 37 | 13 | 26 |
| Recognized on case-by-case or department-by-department basis | 47 | 60 | 49 | 63 | 61 | 61 | 41 | 53 | 60 | 56 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 25 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 86
Policies Video Telecourse Credits Earned and Degree Requirements[a]

| Institutional Policy | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No distinction made between telecourse credits in major field and other degree requirements | 65% | 46% | 63% | 44% | 40% | 42% | 45% | 57% | 42% | 50% |
| Use of telecourse credits restricted in meeting requirements for major field | 3 | 4 | 3 | 4 | 5 | 5 | 7 | 3 | 5 | 4 |
| Varies from department to department | 7 | 7 | 7 | 18 | 10 | 13 | 3 | 11 | 9 | 10 |
| No set policy on use of telecourse credits in meeting degree requirements | 25 | 43 | 27 | 34 | 45 | 40 | 45 | 29 | 44 | 36 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 94 | 1,336 | 2,830 |

[a] As determined from Item 26 of the Istructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 87

Policies on Audio Course Credits Earned and Degree Requirements[a]

| Institutional Policy | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No distinction made between audio course credits earned for major field and other degree requirements | 64% | 46% | 61% | 43% | 40% | 41% | 44% | 56% | 41% | 49% |
| Audio course credits restricted in meeting requirements for major field | 2 | 4 | 3 | 4 | 5 | 4 | 6 | 3 | 5 | 4 |
| Varies from department to department | 7 | 6 | 6 | 18 | 10 | 13 | 3 | 11 | 9 | 10 |
| No set policy on use of audio course credits in meeting degree requirements | 27 | 44 | 30 | 35 | 45 | 42 | 47 | 30 | 45 | 37 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 26 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 88

Task Force, Study Group, or Individual Administrator Present to Investigate Uses and Facilities for Instructional Use of Audio, Video, and Computers[a]

| Task Force, Study Group, or Administrator for Instructional Technology Present | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Percentage of institutions | 67% | 58% | 66% | 67% | 62% | 64% | 64% | 67% | 62% | 65% |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from item 7 of the Computers for Instruction Questionnaire.

[b] Analysis based on all institutions.

Table 89

Primary Decision-Making Responsibility for Computers[a]

| Responsibility | Board of Trustees | Administrative Officer | Academic Officer | Department Head | Faculty Committee | Individual Faculty | Computer Center Staff | Not Applicable |
|---|---|---|---|---|---|---|---|---|
| Planning faculty training for instructional uses of computers[b] | * | 3% | 36% | 13% | 13% | 10% | 23% | 2% |
| Selecting computer mainframe/mini hardware (brand and supplies)[c] | 3 | 21 | 9 | 9 | 15 | 2 | 38 | 3 |
| Selecting microcomputer hardware (brand and supplies)[d] | 1 | 12 | 12 | 22 | 21 | 12 | 19 | 1 |
| Selecting general use software for mainframe/minicomputer[c] | 1 | 12 | 7 | 13 | 14 | 6 | 45 | 3 |
| Selecting course-specific software for mainframe/minicomputer[c] | * | 2 | 5 | 20 | 17 | 39 | 10 | 7 |
| Selecting general use software for microcomputers[d] | * | 5 | 6 | 20 | 18 | 28 | 21 | 2 |
| Selecting course-specific software for microcomputers[d] | * | 1 | 4 | 18 | 12 | 59 | 4 | 2 |

Table 89 continues

Table 89 (continued)

Primary Decision-Making Responsibility for Computers[a]

| Responsibility | Board of Trustees | Administrative Officer | Academic Officer | Department Head | Faculty Committee | Individual Faculty | Computer Center Staff | Not Applicable |
|---|---|---|---|---|---|---|---|---|
| Deciding what computer-related skills and knowledge are to be learned by students[e] | 1 | 1 | 13 | 15 | 38 | 25 | 2 | 5 |
| Representing institution in computer consortium decision making[f] | * | 15% | 22% | 12% | 4% | 6% | 33% | 7% |
| Establishment of incentives/rewards for software development by faculty[e] | 2 | 4 | 21 | 3 | 3 | 1 | 1 | 65 |
| Determining frequency and amount of student use of computers[e] | * | 2 | 10 | 17 | 12 | 25 | 23 | 11 |

Table 89 continues

Table 89 (continued).

Primary Decision-Making Responsibility for Computers[a]

| Responsibility | Board of Trustees | Administrative Officer | Academic Officer | Department Head | Faculty Committee | Individual Faculty | Computer Center Staff | Not Applicable |
|---|---|---|---|---|---|---|---|---|
| Establishing any separate charges for student use of computers[e] | 6 | 18 | 16 | 6 | 5 | 1 | 11 | 37 |

[a] As determined from Item 27 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions where faculty training is offered.

[c] Analysis restricted to institutions where mainframe or minicomputers are available.

[d] Analysis restricted to institutions where microcomputers are available.

[e] Analysis restricted to institutions where computers are available.

[f] Analysis restricted to institutions that were members in computer consortia.

* Represents a positive percentage less than 0.5.

Table 90

Primary Decision-Making Responsibility for Video and Audio Technologies[a]

| Responsibility | Board of Trustees | Administrative Officer | Academic Officer | Department Head | Faculty Committee | Individual Faculty | Specialized Audio/Video Staff | Not Applicable |
|---|---|---|---|---|---|---|---|---|
| Determining course offerings[b] | 2% | 2% | 39% | 28% | 12% | 9% | 6% | 2% |
| Establishing budget for course offerings[b] | 3 | 13 | 51 | 17 | 1 | 1 | 10 | 3 |
| Determining faculty assignments for courses[b] | * | 2 | 35 | 51 | 2 | 6 | 2 | 2 |
| Determining student tuition and fees for courses[b] | 37 | 24 | 23 | 2 | 1 | * | 1 | 12 |
| Planning faculty training for instructional use[c] | * | 2 | 24 | 12 | 4 | 5 | 49 | 4 |
| Establishing budget for purchasing classroom equipment[d] | 3 | 17 | 27 | 16 | 1 | 1 | 29 | 6 |
| Selection of brand or supplier for classroom equipment[d] | * | 6 | 6 | 16 | 2 | 4 | 59 | 7 |

Table 90 continues

Table 90 (continued)

Primary Decision-Making Responsibility for Video and Audio Technologies[a]

| Responsibility | Board of Trustees | Administrative Officer | Academic Officer | Department Head | Faculty Committee | Individual Faculty | Specialized Audio/Video Staff | Not Applicable |
|---|---|---|---|---|---|---|---|---|
| Determining specific classroom equipment[d] | * | 4% | 18% | 14% | 3% | 2% | 51% | 7% |
| Determining transferability of course requirements[d] | 2 | 6 | 51 | 8 | 9 | * | * | 24 |
| Representing institution in consortium decision making[e] | 0 | 3 | 34 | 19 | 1 | 3 | 30 | 9 |

[a] As determined from Item 46 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered video telecourses or audio courses.

[c] Analysis restricted to institutions that offered faculty training in instructional use of video/audio technology.

[d] Analysis based on all institutions.

[e] Analysis restricted to institutions that were members of video or audio consortia.

Table 91

Two-Year Funding Expectations for Instructional Computer Use by Source of Funding, 1984-85[a]

| Source of Funds | Expectation for Funding[b] | | | |
|---|---|---|---|---|
| | Increase | Remain the Same | Decrease | Don't Know |
| General operating funds of the institution | 45% | 31% | 6% | 17% |
| Internally generated funds | 6 | 29 | 1 | 63 |
| Special fees for computer use | 20 | 36 | 2 | 41 |
| Special state appropriations | 16 | 29 | 6 | 48 |
| Nonfederal grants and contracts | 30 | 24 | 3 | 43 |
| Federal grants and contracts | 17 | 27 | 11 | 45 |

[a] As determined from Item 3/ of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 92

Two-year Expectations for Expenditures on Instructional Computer Use by Type of Expenditure, 1984-85[a]

| Type of Expenditure | Expectation of Funding[b] | | | |
|---|---|---|---|---|
| | Increase | Remain the Same | Decrease | Don't Know |
| Equipment | 57% | 19% | 8% | 15% |
| Software | 65 | 17 | 3 | 15 |
| Personnel | 44 | 34 | 3 | 19 |

[a] As determined from Item 38 of the Computers for Instruction Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 93

Two-Year Funding Expectations for

Instructional Video/Audio Use by Source of Funding[a]

| Source of Funds | Expectation for Funding[b] | | | |
|---|---|---|---|---|
| | Increase | Remain the Same | Decrease | Don't know |
| General operating funds of the institution | 32% | 41% | 8% | 19% |
| Internally generated funs | 10 | 33 | 2 | 56 |
| Telecourse tuition and fees | 15 | 32 | 2 | 51 |
| Special state appropriations | 8 | 31 | 7 | 55 |
| Nonfederal grants and contracts | 18 | 26 | 4 | 53 |
| Federal grants and contracts | 10 | 27 | 4 | 54 |

[a] As determined from Item 44 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 49

Instructor Responsibility/Accessibility to Students in Video Telecourses or Audio Courses[a]

| Instructor Responsible/ Accessible to Students | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| No | 4% | 0% | 4% | 3% | 11% | 7% | 0% | 4% | 10% | 5% |
| Yes, for every course | 90 | 90 | 90 | 85 | 84 | 85 | 69 | 88 | 83 | 87 |
| Yes, but only for some courses | 6 | 10 | 6 | 12 | 5 | 8 | 31 | 8 | 7 | 8 |
| Estimated population size | 480 | 15 | 495 | 240 | 190 | 430 | 15 | 724 | 216 | 940 |

[a] As determined from Item 18 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered video telecourses or audio courses.

Table 95

Two-Year Plans for Use of Video Telecourses[a]

| Two-Year Plans for Video Telecourses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| On-campus | | | | | | | | | | |
| Expand use | 44% | 36% | 43% | 43% | 30% | 34% | 28% | 43% | 31% | 37% |
| Same use | 53 | 63 | 54 | 55 | 68 | 64 | 71 | 54 | 67 | 61 |
| Decrease use | 3 | 1 | 3 | 2 | 2 | 2 | 1 | 3 | 2 | 2 |
| Off-campus | | | | | | | | | | |
| Expand use | 40 | 11 | 35 | 37 | 15 | 22 | 13 | 38 | 14 | 27 |
| Same use | 57 | 87 | 62 | 60 | 83 | 75 | 86 | 59 | 84 | 71 |
| Decrease use | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 3 | 2 | 2 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 1,494 | 1,336 | 2,830 |

[a] As determined from Item 23a of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 96

Two-Year Expectations for Enrollment in Video Telecourses[a]

| Expected Direction of Change | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Increase | 66% | 73% | 66% | 65% | 63% | 64% | 70% | 66% | 63% | 65% |
| Decrease | 5 | 0 | 5 | 4 | 4 | 4 | 0 | 5 | 4 | 4 |
| Remain about the same | 29 | 27 | 29 | 31 | 33 | 32 | 30 | 29 | 33 | 31 |
| Estimated population size | 462 | 9 | 471 | 236 | 180 | 416 | 14 | 702 | 200 | 902 |

[a] As determined from Item 24 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered video telecourses.

Table 97

Two-Year Plans for Use of Audio Courses[a]

| Two-Year Plans for Audio Courses | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| On-campus | | | | | | | | | | |
| Expand use | 18% | 29% | 20% | 17% | 15% | 16% | 12% | 18% | 17% | 17% |
| Same use | 78 | 69 | 77 | 79 | 83 | 81 | 86 | 79 | 81 | 80 |
| Decrease use | 4 | 2 | 3 | 4 | 2 | 3 | 2 | 3 | 2 | 3 |
| Off-campus | | | | | | | | | | |
| Expand use | 15 | 9 | 14 | 15 | 6 | 9 | 8 | 15 | 7 | 11 |
| Same use | 82 | 90 | 83 | 82 | 92 | 88 | 90 | 82 | 91 | 86 |
| Decrease use | 3 | 1 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 3 |
| Estimated population size | 926 | 180 | 1,106 | 541 | 1,073 | 1,614 | 110 | 494 | 1,336 | 2,830 |

[a] As determined from Item 23b of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis based on all institutions.

Table 98

Two-Year Expectations for Enrollment in Audio Courses[a]

| Expected Direction of Change | Two-Year | | | Four-Year | | | Total Prof./ Grad. | Total Public | Total Private | Total[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Private | Total | Public | Private | Total | | | | |
| Increase | 54% | 64% | 55% | 31% | 41% | 36% | 80% | 47% | 43% | 46% |
| Decrease | 4 | 0 | 4 | 9 | 0 | 4 | 0 | 5 | 0 | 3 |
| Remain about the same | 42 | 36 | 41 | 60 | 59 | 60 | 20 | 48 | 57 | 51 |
| Estimated population size | 109 | 6 | 115 | 56 | 79 | 135 | 4 | 167 | 87 | 254 |

[a] As determined from Item 24 of the Instructional Video/Audio Questionnaire. Data are percentages of institutions.

[b] Analysis restricted to institutions that offered audio courses.

# VI. TEACHER EDUCATION AND INSTRUCTIONAL TECHNOLOGY

## A. General

As noted in the introduction, this study included a separate census survey of all teacher education programs in the United States, as indicated by the 1983-84 Higher Education Directory and subsequently verified during the survey. In all, 1,202 programs (schools or departments of education) were identified as eligible for the survey, 92 percent of which provided responses to the Teacher Education Questionnaire. The questionnaire solicited information, for each of the three major types of technology, about the availability and accessibility of equipment and program materials, the kinds of training offered or required by programs, the nature and extent of such training, offered or required, the number of students receiving such training, the personnel or agencies responsible for training, and future plans for training.

It should be noted that the questionnaire attempted to identify and distinguish among three groups of teacher education students: undergraduate students, preservice graduate students and in-service graduate students. Unfortunately, a substantial number of programs found it difficult or impossible to make such distinctions for preservice and in-service graduate students. Consequently, it was necessary to aggregate these groups for analysis, and therefore, results in this section are reported for graduate students in general.

Findings in this section are provided for the total population of teacher education programs and, for different types of programs. Three types of programs were identified, based on reported program offerings: (1) undergraduate programs only (representing 41 percent of all programs); (2) combined undergraduate and graduate programs (57 percent of total); and (3) graduate programs only (2 percent of total). The great majority of undergraduate and graduate only programs have total student enrollments of 500 or less, which is the median enrollment size of the combined undergraduate and graduate programs. Therefore, to allow for interpretation of differences related to size as well as type of program, the combined undergraduate-graduate programs were subdivided into small (enrollment less than 500) and large (enrollment of 500 or more), and the results are reported separately for these programs as well.

## B. Availability of Equipment and Program Materials

Availability of technologies (equipment and program materials) at the institutional level, as assessed in Section II, does not necessarily reflect availability to all departments and

program areas. Consequently, this study also attempted to assess both the availability and accessibility of various kinds of technological equipment and program materials among schools and departments of education. Respondents were asked to indicate whether each type of equipment was available and readily accessible (i.e., can generally be used when needed), available but not readily accessible, or not available. For clarity of presentation, Table 99 shows the percentages of programs reporting availability of equipment regardless of whether it is readily accessible (which may reflect a subjective assessment by the particular respondent). More than 9 out of 10 schools and departments of education, regardless of program type, reported television sets, videocassettes and videotape recorders, video cameras, audiocassette and tape recorders, record players and microcomputers were available. Although not shown in the table, the majority also indicated that this equipment was readily accessible. Word processors and terminals connected to mainframes or minicomputers were available at 84 percent and 76 percent of the teacher preparation programs, respectively, and in most cases were readily accessible. On the other hand, audio conferencing facilities, local area networks, interactive videodisc players, videotex terminals, and teletext converters, were available to one third or fewer programs and were proportionately more likely to be not readily accessible.

The availability and accessibility of equipment was found to be related to type and size of program. In general, availability and accessibility of all types of equipment were more likely for programs with both undergraduate and graduate offerings than for undergraduate programs only and, within combined undergraduate-graduate schools or departments, more likely for large programs than for small programs. For example, terminals connected to mainframes or minicomputers were available in proportionately more large combined programs (90 percent) than small combined programs (77 percent), which, in turn, were more likely to have such equipment than were undergraduate-only programs (65 percent).

More than 9 out of 10 schools and departments of education also had an instructional materials center or other central collection of audio, video or computer programs and materials (Table 100). The availability of various program materials in instructional materials centers corresponded closely to the availability of the equipment required for the use of such materials. Thus, for example, the most frequently named contents of central collections were videocassettes and tapes and audiocassettes and tapes, available in about four fifths and three fourths, respectively, of all schools and departments of education. Each of the major types of microcomputer software was available in half or more of the schools and departments, with almost three out of four programs indicating that instructional courseware and word processing software for microcomputers were

available. In contrast, only about one third of the programs kept mainframe software documentation in an instructional materials center. As with the availability of equipment, the availability of instructional materials centers, as well as of each of the various types of program materials kept in such centers, was related to the type and size of teacher education program, with greatest availability being in larger combined undergraduate-graduate programs.

## C. Program Offerings in the Instructional Use of Technology

### 1. Training in Computers

About 84 percent of all schools and departments of education offered to their students, either directly or through cooperative arrangements within the same or with another institution or organization, some form of training in the instructional uses of computers (Table 101). The percentage of programs offering such training in computers varied by type of program, with almost all of the larger combined undergraduate-graduate programs reporting having offered such training, followed in order by graduate-only programs (91 percent), small combined undergraduate-graduate programs (87 percent), and undergraduate-only programs (72 percent).

Schools and departments of education offering training in computers were asked to note all of the types of training offered. Training in the operation of equipment was the most consistently mentioned type, except for graduate-only programs, 93 percent of which also indicated offering such training. As shown in Table 102, most other types of training in instructional computer use were also widely offered (i.e., by 70 percent or more of programs), training in the management of multiple small groups of students (noted by about half of the programs) and training in the use of computers for interactive control of video and audio materials (named by about 30 percent of all institutions).

A good indication of the importance attributed to such training may be inferred from the extent to which the training provided was a requirement for students in these programs. Although training in the operation of equipment was offered by more than 9 out of 10 programs that offered training in computers, it was a requirement for students in only about half of these programs. Other types of training in computers were even less likely to be required (Table 103). In general, most types of training were more likely to be required of students in undergraduate-only programs than in combined undergraduate-graduate programs.

Training in the instructional uses of computers may be provided in a variety of forms. Such training was provided as a

separate full course in more than four out of five of the combined undergraduate-graduate and graduate-only programs, and as a module or modules within an education course in about two thirds of these programs (Table 104). Undergraduate-only programs were more likely to offer such training as modules within an education course (66 percent) than as a separate full course (58 percent). Proportionately more of the graduate-only programs (81 percent) and large combined undergraduate-graduate programs (76 percent) reported offering training in the form of workshops than did the small combined programs (55 percent) or undergraduate-only programs (34 percent). Summer institutes were the least likely format for such training among all types of programs, although more than half (56 percent) of the larger combined undergraduate-graduate programs reported training was provided through these institutions.

About 85 percent of all programs reported that school or department of education faculty trained students in the instructional use of computers (Table 105). About half of the programs used computer service faculty for such training, with proportionately more of the undergraduate only programs (59 percent) reporting use of this resource. Relatively few programs reported that such training was provided by resources outside their institution (e.g., school district personnel, consultants, private industry, vendors).

Among the programs offering training, about 57 percent indicated that some training in the instructional use of computers was required of at least some of their preservice students, with proportionately more of the undergraduate-only programs (63 percent) reporting such requirements (Table 106).

Although only about 10 percent of these programs required training in instructional computer uses for preservice students in all grade-level specialties, more than four out of five programs indicated such a requirement for prospective elementary school teachers; and about 70 percent required such training for prospective secondary school teachers (Table 107). Such training requirements usually took the form of a module within an education course, especially in undergraduate-only programs (Table 108); however, substantial numbers of programs also satisfyied this requirement by a separate full course.

Finally, all schools and departments of education were asked if they had any formal policies about computer literacy, beyond any institutionwide policies, for all teacher education students. Table 109 shows that fewer than one out of four programs had such a policy in 1984-85, with proportionately more (30 percent) of the larger combined undergraduate-graduate programs such a policy. For programs with special computer literacy policies for their teacher education students, the most frequently named requirement (named by more than four out of five of these

programs) was that students should know general operations or procedures for using canned software. Two other frequently mentioned policies were that students should take an introductory course in computers for credit and should be familiar with the ethical issues associated with computer use. The percentages of institutions indicating these and other less frequently named elements of their computer literacy policy are shown in Table 110.

2. Training in Video Technologies

The percentages of teacher education programs, regardless of type of program, that offered training to students in the instructional use of video technologies were somewhat lower than the corresponding percentages for computers. Table 111 shows that about two thirds (64 percent) of all schools and departments of education were offering such training during 1984-85. Proportionately more (72 percent) of the larger combined undergraduate-graduate programs reported offering this training to their students.

The types of training most frequently offered by these programs (Table 112) were, in order, operation of equipment (94 percent of the programs), integration of equipment with general instructional objectives (82 percent) and with overall curriculum content (73 percent) and selection of video and TV programs (69 percent). These were also the most frequently named types of training required of students by institutions requiring some training in the instructional use of video (Table 113).

Unlike training for computers, training in the instructional use of video was most frequently offered by all programs (except graduate-only programs) as a module within an education course (Table 114); however, substantial numbers of programs (including 60 percent of the larger combined programs) indicated such training was also offered as a separate full course. As with computers, training in the instructional use of video technologies was most frequently conducted by school or department of education faculty (in 85 percent of programs) and seldom involved the use of resources outside the institution (Table 115).

Interestingly, the percentages of schools and departments of education indicating that some training in the instructional use of video was required for at least some of their preservice students (Table 116) are somewhat higher than the corresponding percentages reported for training in computers (Table 106). About two thirds (64 percent) of the programs offering training in the use of video reported such a requirement for some preservice students, with proportionately more (72 percent) of the undergraduate-only programs indicating so. More than four out of five of these programs indicated such a requirement for

prospective elementary school teachers and almost as many indicated such a requirement for prospective secondary school teachers (Table 117).

### 3. Training in Audio Technologies

Formal training for students in the instructional use of audio technologies by schools and departments of education was somewhat less common than such offerings for computers and video technologies. Slightly more than half (55 percent) of all teacher education programs reported offering some training in the instructional use of audio to their students during 1984-85 (Table 118). Proportionately more (about 60 percent) of the larger combined undergraduate-graduate programs and the undergraduate-only programs offered such training to their students.

As with computers and video, training most frequently involved operation of the equipment. Other types of training, however, were also frequently offered by these programs. Indeed, 70 percent or more of the programs reported offering each type of training listed in Table 119, except those involving sophisticated equipment (e.g., audio conferencing, music/ speech synthesizers) which, as we have seen, were unavailable to most teacher education programs. Interestingly, the percentages of programs requiring various types of student training in audio technologies (Table 120) are somewhat higher than the corresponding percentages reported for video technologies.

## D. Student Participation in Program Offerings

Schools and departments of education indicating that they offered training to students in the instructional use of computers, video or audio were also asked to report the numbers of undergraduate and graduate students who were receiving this training during the current term. Table 121 shows that an estimated 18 percent (or 66,055) of the undergraduate students and about the same percentage (or 45,591) of the graduate students enrolled in teacher education programs that offered training in the instructional use of computers participated in such training. The percentages are about the same for undergraduate students but somewhat lower for graduate students for training in the instructional use of video and audio; about 17 percent of the undergraduate students and only 6 to 8 percent of the graduate students were estimated to have received training in these technologies during the current term. Within the combined undergraduate-graduate programs offering training in the instructional use of a particular technology, proportionately more undergraduate and graduate students received such training in small programs than in large programs.

Schools and departments of education with combined

undergraduate-graduate teacher education programs were asked if the training offered to students in the instructional use of the technologies was very different for undergraduate and graduate students. More than half of the programs to which this question applied indicated that the training offered for each of the three types of technology was very different for graduate and undergraduate students (Table 122). About two thirds of the programs reporting such differences indicated, for each type of technology, that either the amount or kind of training provided or both were very different for graduate students. This finding is consistent with the finding that among programs offering training in the instructional use of computers, graduate students on the average received almost twice the amount of training as undergraduate students (i.e., an average of 57 hours for graduate students versus an average of 34 hours for undergraduate students) (Table 123).

E. Plans for Training in Technology

Finally, all schools and departments of education were asked to indicate their plans for future training in the instructional use of computers, video and audio. The most frequently named plan for computers was expanding facilities or equipment, indicated by 76 percent of all programs. Increasing emphasis on training in the selection of software and adding new courses also were named by more than six out of ten programs (Table 124). In general, proportionately higher numbers of the larger combined undergraduate-graduate programs reported each area of planning than did the smaller combined programs, which in turn were more likely to report such plans than were undergraduate-only programs.

The most frequently noted plans for training in the instructional uses of video (noted by about two thirds of all programs) were increased emphasis on training in the selection of media and program materials and expanding facilities or equipment (Table 125). These two areas were also the most frequently indicated for training in the instructional uses of audio technologies (Table 126). For both video and audio planning, no consistent variations were observed among the different types of teacher education programs.

Some interesting differences in training plans emerge through comparisons across types of technology. First, substantially higher numbers of institutions planned computer facilities and equipment than video or audio facilities. Furthermore, the number of programs planning to add new courses for training in computers was more than double the number planning new courses for video training and almost three times the number planning additional courses for training in audio technologies. Similar differences were found for adding new qualified staff, with the percentage of programs indicating such plans for computers being

about twice the percentage indicating such plans for video or audio technologies.

Tables 99 through 126
Cited in Section V: Teacher Education

Most of the tables in this section report data for 1984-85 by level of offering and control. Other parameters are identified on individual tables.

Table 99
Availability of Equipment[a]

| Equipment Available | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Television Sets | 95% | 96% | 99% | 98% | 95% | 97% |
| Videocassette/videotape recorders | 96 | 98 | 99 | 98 | 95 | 98 |
| Videodisc players | 32 | 37 | 43 | 41 | 41 | 37 |
| Video cameras | 93 | 95 | 98 | 97 | 87 | 95 |
| Radios | 69 | 70 | 66 | 68 | 63 | 68 |
| Audiocassette/ audio tape recorders | 97 | 97 | 97 | 97 | 98 | 99 |
| Audio conferencing facilities | 26 | 34 | 52 | 43 | 27 | 36 |
| Record players | 96 | 94 | 96 | 95 | 90 | 95 |
| Pocket calculators (programmable) | 39 | 48 | 48 | 48 | 7 | 44 |
| Microcomputers | 90 | 95 | 98 | 96 | 87 | 93 |
| Word processors | 81 | 86 | 87 | 87 | 82 | 84 |
| Computer modems | 49 | 65 | 74 | 69 | 64 | 61 |
| Terminals connected to mainframe or mimi computers | 65 | 77 | 90 | 84 | 73 | 76 |
| Local microcomputer networks | 27 | 30 | 43 | 37 | 41 | 33 |
| Interactive videodisc players (with computers for control) | 10 | 12 | 28 | 20 | 18 | 15 |

Table 99 continues

Table 99 (continued)
Availability of Equipment[a]

| Equipment Available | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Videotex terminals | 9 | 11 | 16 | 14 | 14 | 12 |
| Teletext converters | 8 | 8 | 12 | 9 | 9 | 9 |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a]As determined from Item 29 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis based on all programs.

Table 100
Availability of Program Materials in Instructional Materials Centers[a]

| Program Materials Available | Undergraduate Only | Undergraduate-Graduate ≤ 500 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Video/Audio | | | | | | |
| Videocassettes/tapes or videodiscs | 79% | 84% | 88% | 86% | 78% | 83% |
| Interactive videodisc packages with computer software | 15 | 20 | 26 | 23 | 18 | 19 |
| Audiocassettes/tapes or records (music only) | 75 | 71 | 74 | 72 | 52 | 73 |
| Audiocassettes/tapes or records (excluding music) | 76 | 77 | 81 | 79 | 60 | 77 |
| Microcomputer Materials | | | | | | |
| Instructional courseware | 64 | 77 | 86 | 81 | 69 | 74 |
| Modular software for programmed instruction | 49 | 55 | 70 | 63 | 52 | 57 |
| Business applications software (e.g., VisiCalc) | 39 | 48 | 67 | 58 | 52 | 50 |
| Word processing software (e.g., Word Star) | 65 | 73 | 82 | 78 | 78 | 72 |
| Computer-based instructional management software | 42 | 46 | 63 | 55 | 43 | 49 |
| Statistical analysis packages | 42 | 51 | 72 | 62 | 43 | 53 |

Table 100 continues

Table 100 (continued)
Availability of Program Materials in
Instructional Materials Centers[a]

| Program Materials Available | Undergraduate Only | Undergraduate-Graduate ≤ 500 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Microcomputer Materials | | | | | | |
| Data base systems (e.g., dBase II) | 34 | 46 | 65 | 56 | 52 | 47 |
| Software documentation | 37 | 48 | 65 | 57 | 43 | 48 |
| Other | | | | | | |
| Mainframe software documentation | 25 | 33 | 45 | 39 | 31 | 33 |
| None of the above | 7 | 4 | 2 | 3 | 9 | 5 |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a] As determined from Item 30 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

[b] Analysis based on all programs.

Table 101
Teacher Training Offered to Students in the Instructional Use of Computers[a]

| Training in Instructional Computer Use Offered to Students | Undergraduate-Graduate | | | | | |
|---|---|---|---|---|---|---|
| | Undergraduate Only | ≤ 50 Students | > Than 500 Students | Total | Graduate Only | Total[b] |
| Percentage of programs | 72% | 87% | 98% | 93% | 91% | 84% |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a] As determined from Item 3 of the Teacher Education Questionnaire.

[b] Analysis based on all programs.

Table 102
Types of Student Training Offered in the Instructional Uses of Computers[a]

| Equipment | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Uses in instructional management (testing, recordkeeping) | 67% | 73% | 86% | 80% | 81% | 75% |
| "Tool" uses (e.g., spread sheet, word processing, problem solving) | 74 | 78 | 88 | 84 | 100 | 81 |
| Use for interactive control of video or audio materials | 18 | 24 | 44 | 36 | 34 | 30 |
| Use for delivery of programmed instruction (e.g., tutorials, drill and practice) | 85 | 88 | 94 | 90 | 88 | 89 |
| Integration of computers with overall instruction methods | 77 | 87 | 92 | 90 | 94 | 85 |
| Integration of computers with overall curriculum content | 65 | 78 | 85 | 82 | 88 | 76 |
| Writing or design of programs | 65 | 68 | 81 | 75 | 54 | 71 |
| Selection of software for instruction | 78 | 88 | 96 | 93 | 100 | 88 |

Table 102 continues

Table 102 (continued)
Types of Student Training Offered in the Instructional Uses of Computers[a]

| Equipment | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Management of multiple small groups of students using computers | 43 | 52 | 60 | 57 | 69 | 52 |
| Operation of equipment | 91 | 89 | 97 | 94 | 93 | 93 |
| Other | 36 | 37 | 28 | 32 | 33 | 34 |
| Estimated population size | 358 | 289 | 340 | 629 | 23 | 1,010 |

[a] As determined from Item 4 of the Teacher Education Questionnaire. Data are percentages of programs.

[b] Analysis restricted to programs that offered some training in computers.

Table 103

Student Training in the Instructional Use of Computers[a]

| Type of Computer Training Required | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Use in instructional management (testing, recordkeeping) | 32% | 29% | 25% | 27% | 19% | 28% |
| "Tool" uses (e.g., spread sheet, word processing, problem solving) | 32 | 28 | 23 | 26 | 38 | 28 |
| Use for interactive control of video or audio materials | 5 | 7 | 8 | 8 | 7 | 7 |
| Use for delivery of programmed instruction (e.g., tutorials, drill and practice) | 49 | 41 | 40 | 41 | 38 | 43 |
| Integration of computers with overall instruction methods | 47 | 41 | 41 | 41 | 47 | 43 |

Table 103 continues

Table 103 (continued)
Student Training in the Instructional Use of Computers[a]

| Type of Computer Training Required | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Integration of computers with overall curriculum content | 39 | 32 | 36 | 34 | 38 | 36 |
| Writing or design of programs | 20 | 17 | 14 | 15 | 7 | 17 |
| Selection of software for instruction | 45 | 39 | 39 | 39 | 50 | 41 |
| Management of multiple small groups of students using computers | 19 | 17 | 15 | 16 | 25 | 17 |
| Operation of equipment | 61 | 46 | 49 | 48 | 40 | 52 |
| Other | 4 | 3 | 6 | 5 | 0 | 5 |
| Estimated population size | 358 | 289 | 340 | 629 | 23 | 1,010 |

[a] As determined from Item 4 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs that offered training in computers.

Table 104
Teacher Training Programs Offered in the Instructional Use of Computers[a]

| Type of Training Program Offered | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Module(s) within an education course | 66% | 60% | 70% | 66% | 68% | 66% |
| Full course | 58 | 79 | 91 | 86 | 81 | 76 |
| Summer institutes | 16 | 40 | 56 | 49 | 43 | 38 |
| Workshops | 34 | 55 | 76 | 67 | 81 | 56 |
| Other | 7 | 5 | 9 | 7 | 13 | 7 |
| Estimated population size | 358 | 289 | 340 | 629 | 23 | 1,010 |

[a] As determined from Item 5 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs that offered training in computers.

...responsibility for conducting teacher training in Instructional Computer Use[a]

| Responsibility for Training | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| School or department of education faculty | 75% | 83% | 96% | 91% | 88% | 85% |
| Computer science faculty | 59 | 49 | 42 | 45 | 19 | 49 |
| Other faculty within the institution | 21 | 23 | 22 | 22 | 25 | 22 |
| School districts | 4 | 6 | 12 | 10 | 25 | 8 |
| Vendors | [illegible] | 2 | 2 | 2 | 6 | 2 |
| Other private industry | [illegible] | 1 | 1 | 1 | 0 | 1 |
| Outside consultants | 5 | 15 | 11 | 12 | 19 | 10 |
| Other | 3 | 6 | 5 | 5 | 0 | 5 |
| Estimated population size | 358 | 289 | 340 | 629 | 23 | 1,010 |

[a]As determined from Item 6 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis restricted to programs that offered training in computers.

Table 106
Training Required in the Instructional Use of Computers for Some Preservice Students[a]

| Training in Instructional Computer Use Required for Preservice Students | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Percentage of programs | 63% | 53% | 56% | 55% | 36% | 57% |
| Estimated population size | 358 | 289 | 340 | 629 | 23 | 1,010 |

[a] As determined from Item 10 of the Teacher Education Questionnaire.

[b] Analysis restricted to programs that offered training in computers.

Table 107
Grade-Level Specialties Requiring Training
in the Instructional Uses of Computers[a]

| Grade-Level Specialties | Under-graduate Only | Undergraduate-Graduate | | | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| | | ≤ 50 Students | > Than 500 Students | Total | | |
| Preschool | 47% | 49% | 54% | 52% | 28% | 50% |
| Elementary school | 90 | 81 | 77 | 79 | 71 | 83 |
| Secondary school | 73 | 71 | 69 | 70 | 71 | 71 |
| Adult basic education | 1 | 0 | 1 | 1 | 0 | 1 |
| All of the above | 4 | 10 | 17 | 14 | 29 | 10 |
| Estimated population size | 225 | 153 | 190 | 343 | 8 | 576 |

[a]As determined from Item 11 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis restricted to programs that require training in computers.

Table 108
Training Programs in Instructional Computer Use
Required for Preservice Students[a]

| Type of Training Required | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Module(s) within an education course | 79% | 69% | 71% | 70% | 100% | 74% |
| Full course | 41 | 60 | 63 | 62 | 33 | 54 |
| Summer institutes | 9 | 14 | 20 | 17 | 33 | 14 |
| Workshops | 19 | 28 | 32 | 30 | 50 | 26 |
| Other | 3 | 1 | 3 | 2 | 0 | 2 |
| Estimated population size | 225 | 153 | 190 | 343 | 8 | 576 |

[a]As determined from Item 12 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis restricted to programs that require training in computers.

Table 109

Computer Literacy Requirements for All Students[a]

| Student Computer Literacy Required | Undergraduate Only | Undergraduate-Graduate | | | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| | | ≤ 50 Students | > Than 500 Students | Total | | |
| Percentage of programs | 20% | 21% | 30% | 26% | 0% | 23% |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a] As determined from Item 14 of the Teacher Education Questionnaire.

[b] Analysis based on all programs.

Table 110
Elements of Computer Literacy Policies[a]

| Computer Literacy Policy Requires Students to: | Undergraduate Only | Undergraduate and Graduate ≤ 50 Students | Undergraduate and Graduate > Than 500 Students | Undergraduate and Graduate Total | Total[b] |
|---|---|---|---|---|---|
| Take an introductory course in computers for credit | 69% | 76% | 70% | 72% | 71% |
| Be able to write a simple program | 63 | 63 | 56 | 58 | 60 |
| Be able to document their programming | 38 | 39 | 38 | 38 | 38 |
| Be able to test and debug simple programs | 37 | 45 | 48 | 47 | 43 |
| Know how to develop simple computer-oriented algorithms | 21 | 37 | 40 | 39 | 32 |
| Be able to document their algorithms | 14 | 30 | 22 | 26 | 21 |
| Know general operations or procedures for using canned software | 82 | 81 | 89 | 85 | 84 |
| Know what types of problems are amenable to computer solution | 49 | 66 | 76 | 72 | 63 |
| Understand the potential use of large bodies of quantitative data in a particular field | 30 | 37 | 34 | 35 | 33 |
| Be familiar with the social implications of computer use | 48 | 61 | 62 | 62 | 57 |



Table 110 continues

Table 110 (continued)
Elements of Computer Literacy Policies[a]

| Computer Literacy Policy Requires Students to: | Undergraduate Only | Undergraduate and Graduate: ≤ 50 Students | Undergraduate and Graduate: > Than 500 Students | Undergraduate and Graduate: Total | Total[b] |
|---|---|---|---|---|---|
| Be familiar with the ethical issues associated with computer use | 62 | 72 | 78 | 76 | 71 |
| Other | 7 | 10 | 13 | 12 | 10 |
| Estimated population size | 100 | 70 | 104 | 174 | 274 |

[a] As determined from Item 15 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs with computer literacy requirements.

Table 111
Teacher Training Offered to Students
in the Instructional Use of Video[a]

| Training in Instructional Video Use Offered to Students | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Percentage of programs | 63% | 57% | 72% | 65% | 58% | 64% |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a] As determined from Item 16 of the Teacher Education Questionnaire.

[b] Analysis based on all programs.

Table 112

Types of Student Training in the Instructional Uses of Video[a]

| Type of Training Offered | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Selection of video/TV programs for instruction | 62% | 70% | 74% | 73% | 88% | 69% |
| Production or design of video/TV programs for instruction | 34 | 45 | 67 | 58 | 75 | 48 |
| Use of live interactive TV for instruction | 34 | 35 | 43 | 39 | 26 | 37 |
| Integration of video with general instructional objectives | 75 | 85 | 87 | 86 | 100 | 82 |
| Integration of video with overall curriculum content | 67 | 74 | 79 | 77 | 100 | 73 |
| Use of video enhancements with computers | 18 | 22 | 43 | 35 | 37 | 28 |
| Operation of equipment | 94 | 92 | 94 | 94 | 88 | 94 |
| Estimated population size | 314 | 189 | 250 | 439 | 15 | 768 |

[a]As determined from Item 17 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis restricted to programs that offered some training in video.

Table 113
Types of Student Training Required in the Instructional Uses of Video[a]

| Type of Training Required | Under-graduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Selection of video/TV programs for instruction | 43% | 44% | 29% | 35% | 50% | 39% |
| Production or design of video/TV programs for instruction | 16 | 14 | 14 | 14 | 25 | 15 |
| Use of live interactive TV for instruction | 22 | 16 | 12 | 13 | 13 | 17 |
| Integration of video with general instructional objectives | 57 | 55 | 38 | 45 | 50 | 50 |
| Integration of video with overall curriculum content | 49 | 48 | 33 | 39 | 50 | 43 |
| Use of video enhancements with computers | 5 | 6 | 9 | 8 | 12 | 7 |
| Operation of equipment | 75 | 68 | 49 | 57 | 38 | 64 |
| Estimated population size | 314 | 189 | 250 | 439 | 15 | 768 |

[a]As determined from Item 17 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis restricted to programs that offered some training in video.

Table 114
Types of Teacher Training Programs Offered
in the Instructional Use of Video[a]

| Type of Training Offered | Under-graduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Module(s) within an education Course | 85% | 77% | 73% | 75% | 50% | 78% |
| Full course | 20 | 36 | 60 | 50 | 62 | 38 |
| Summer institutes | 3 | 10 | 13 | 12 | 0 | 8 |
| Workshops | 14 | 19 | 30 | 25 | 75 | 22 |
| Other | 4 | 6 | 2 | 3 | 13 | 4 |
| Estimated population size | 314 | 189 | 250 | 439 | 15 | 768 |

[a] As determined from Item 18 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs that offered training in video.

Responsibility for Conducting Teacher Training in Instructional Video Use[a]

| Responsibility for Training | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| School or department of education faculty | 82% | 80% | 92% | 87% | 100% | 85% |
| Specialized audio/video staff | 44 | 41 | 48 | 45 | 26 | 44 |
| Other faculty within the institution | 13 | 9 | 17 | 14 | 12 | 13 |
| School districts | 2 | 4 | 2 | 2 | 0 | 2 |
| Local public TV station personnel | * | 3 | 2 | 2 | 0 | 1 |
| Other private industry | 0 | 0 | 1 | * | 0 | * |
| Outside consultants | 3 | 5 | 2 | 3 | 0 | 3 |
| Other | 2 | 4 | 2 | 3 | 0 | 2 |
| Estimated population size | 314 | 189 | 250 | 439 | 15 | 768 |

[a]As determined from Item 19 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis restricted to programs that offered training in video.

*Represents a positive percentage less than 0.5.

Table 116
Teacher Training in the Instructional Uses of Video
Required for Some Preservice Students[a]

| Training in Instructional Video Use Required for Preservice Students | Undergraduate-Graduate | | | | | |
|---|---|---|---|---|---|---|
| | Undergraduate Only | ≤ 50 Students | > Than 500 Students | Total | Graduate Only | Total[b] |
| Percentage of programs | 72% | 59% | 60% | 60% | 50% | 64% |
| Estimated population size | 314 | 189 | 250 | 439 | 15 | 768 |

[a] As determined from Item 21 of the Teacher Education Questionnaire.

[b] Analysis restricted to programs that offered training in video.

Table 117
Grade-Level Specialties Requiring Training
in the Instructional Use of Video[a]

| Grade-Level Specialties | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Preschool | 45% | 51% | 52% | 52% | 50% | 49% |
| Elementary school | 87 | 85 | 78 | 81 | 74 | 84 |
| Secondary school | 83 | 74 | 77 | 76 | 74 | 79 |
| Adult basic education | 0 | 1 | 1 | 1 | 0 | * |
| All of the above | 5 | 4 | 13 | 9 | 26 | 8 |
| Estimated population size | 226 | 112 | 150 | 262 | 7 | 495 |

[a] As determined from Item 22 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs that require training in video.

* Represents a positive percentage less than 0.5.

Table 118
Teacher Training Offered to Students
in the Instructional Use of Audio[a]

| Training in Instructional Audio Use Offered to Students | Undergraduate Only | Undergraduate-Graduate | | | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| | | ≤ 50 Students | > Than 500 Students | Total | | |
| Percentage of programs | 60% | 44% | 61% | 53% | 33% | 55% |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a]As determined from Item 24 of the Teacher Education Questionnaire.

[b]Analysis based on all programs.

Table 119
Types of Student Training in the Instructional Uses of Audio[a]

| Type of Training Offered | Undergraduate Only | Undergraduate-Graduate: ≤ 50 Students | Undergraduate-Graduate: > Than 500 Students | Undergraduate-Graduate: Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Use of audio conferencing in instruction | 19% | 27% | 35% | 32% | 20% | 26% |
| Selection of audio materials for instruction | 82 | 82 | 89 | 86 | 60 | 85 |
| Production or design of audio materials for instruction | 62 | 65 | 78 | 73 | 80 | 69 |
| Use of music/speech synthesizers for instruction | 16 | 21 | 32 | 27 | 40 | 23 |
| Integration of audio with overall instructional methods | 85 | 79 | 91 | 86 | 100 | 86 |
| Integration of audio with overall curriculum content | 5 | 70 | 84 | 78 | 100 | 78 |
| Operation of equipment | 95 | 96 | 97 | 96 | 100 | 95 |
| Estimated population size | 300 | 146 | 212 | 358 | 8 | 666 |

[a] As determined from Item 25 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs that offered some training in audio.

Types of Student Training Required in the Instructional Uses of Audio[a]

| Type of Training Required | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Use of audio conferencing for instruction | 11% | 17% | 13% | 15% | 0% | 13% |
| Selection of audio materials for instruction | 63 | 62 | 49 | 54 | 20 | 58 |
| Production or design of audio materials for instruction | 39 | 42 | 40 | 41 | 20 | 40 |
| Use of music/speech synthesizers in instruction | 6 | 11 | 4 | 7 | 0 | 7 |
| Integration of audio with overall instructional methods | 68 | 63 | 48 | 54 | 40 | 60 |
| Integration of audio with overall curriculum content | 59 | 56 | 46 | 50 | 40 | 54 |
| Operation of equipment | 81 | 74 | 61 | 66 | 60 | 72 |
| Estimated population size | 300 | 146 | 212 | 358 | 8 | 666 |

[a] As determined from Item 25 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs that offered some training in audio.

Table 121
Students Receiving Training in the Instructional Use of Technologies[a]

| No. (%) of Students Receiving Training in: | Undergraduate Only | Undergraduate-Graduate | | | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| | | ≤ 50 Students | > Than 500 Students | Total | | |
| **Computers** | | | | | | |
| Undergraduate | 11,921 (24%) | 10,763 (28%) | 43,371 (16%) | 54,134 (17%) | NA | 66,055 (18%) |
| Graduate | NA | 7,907 (28%) | 35,924 (17%) | 43,831 (18%) | 1,760 (27%) | 45,591 (18%) |
| **Video** | | | | | | |
| Undergraduate | 9,357 (21%) | 5,777 (22%) | 27,964 (15%) | 33,741 (16%) | NA | 43,098 (17%) |
| Graduates | NA | 1,985 (11%) | 11,240 (8%) | 13,225 (8%) | 617 (13%) | 13,842 (8%) |
| **Audio** | | | | | | |
| Undergraduate | 9,013 (21%) | 4,639 (21%) | 25,509 (14%) | 30,148 (15%) | NA | 39,161 (16%) |
| Graduate | NA | 1,774 (12%) | 6,676 (5%) | 8,450 (6%) | 805 (29%) | 9,300 (6%) |

[a] As determined from Items 2, 7, 20, and 26 of the Teacher Education Questionnaire.

[b] Analysis restricted to programs that offer training in the particular technology.

Table 122

Differences in Training in the Instructional Use of Technologies Offered to Graduate and Undergraduate Students[a]

| Training | Type of Technology[b] | | |
|---|---|---|---|
| | Computers | Video | Audio |
| Training about the same for graduates and undergraduates | 42% | 39% | 47% |
| Amount of training very different for graduates | 41 | 38 | 33 |
| Kind of training very different for graduates | 45 | 40 | 34 |

[a] As determined from Items 8, 23 and 27 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis restricted to programs that offered training in the particular technology and that enrolled both undergraduate and graduate students.

Table 123
Length of Training Offered in Instructional Computer Use[a]

| Hours of Training | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Undergraduates | | | | | | |
| Mean | 24 | 31 | 36 | 34 | NA | 30 |
| Median | 12 | 15 | 20 | 15 | NA | 15 |
| Graduates | | | | | | |
| Mean | NA | 49 | 64 | 57 | 75 | 38 |
| Median | NA | 20 | 30 | 30 | 30 | 30 |
| Estimated population size | 358 | 289 | 340 | 629 | 23 | 1,010 |

[a]As determined from Item 9 of the Teacher Education Questionnaire.

[b]Analysis restricted to programs that offered training in computers.

Table 124
Plans for Training in the Instructional Uses of Computers[a]

| Training Plans | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Add new qualified faculty | 17% | 32% | 43% | 38% | 46% | 30% |
| Add new courses | 48 | 63 | 75 | 69 | 87 | 61 |
| Phase out certain courses | 6 | 9 | 11 | 10 | 20 | 9 |
| Expand facilities or equipment | 70 | 73 | 84 | 79 | 93 | 76 |
| Initiate joint program with local industry | 2 | 4 | 8 | 6 | 13 | 5 |
| Increase emphasis on selection of software | 62 | 67 | 65 | 66 | 46 | 64 |
| Decrease emphasis on operation of equipment | 3 | 8 | 12 | 10 | 0 | 7 |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a]As determined from Item 13 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b]Analysis based on all programs.

Table 125
Plans for Training in the Instructional Use of Video[a]

| Training Plans | Undergraduate Only | Undergraduate-Graduate ≤ 50 Students | Undergraduate-Graduate > Than 500 Students | Undergraduate-Graduate Total | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| Add new qualified faculty | 11% | 16% | 24% | 21% | 25% | 16% |
| Add new courses | 17 | 28 | 41 | 35 | 50 | 28 |
| Phase out certain courses | 5 | 5 | 10 | 8 | 0 | 7 |
| Expand facilities or equipment | 61 | 57 | 69 | 63 | 75 | 63 |
| Initiate joint program with local industry | 2 | 8 | 7 | 8 | 0 | 5 |
| Increase emphasis on selection of media and program materials | 67 | 65 | 63 | 64 | 62 | 65 |
| Decrease emphasis on operation of equipment | 4 | 7 | 12 | 10 | 0 | 7 |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a]As determined from Item 28 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of institutions.

[b]Analysis based on all programs.

Table 126
Plans for Training in the Instructional Use of Audio[a]

| Training Plans | Undergraduate Only | Undergraduate-Graduate | | | Graduate Only | Total[b] |
|---|---|---|---|---|---|---|
| | | ≤ 50 Students | > Than 500 Students | Total | | |
| Add new qualified faculty | 10% | 13% | 20% | 17% | 29% | 14% |
| Add new courses | 15 | 26 | 25 | 25 | 43 | 21 |
| Phase out certain courses | 6 | 5 | 8 | 7 | 15 | 7 |
| Expand facilities or equipment | 55 | 52 | 56 | 54 | 57 | 55 |
| Initiate joint program with local industry | 1 | 10 | 3 | 6 | 0 | 4 |
| Increase emphasis on selection of media and program materials | 66 | 67 | 66 | 66 | 57 | 66 |
| Decrease emphasis on operation of equipment | 3 | 8 | 12 | 10 | 0 | 7 |
| Estimated population size | 498 | 332 | 347 | 679 | 25 | 1,202 |

[a] As determined from Item 28 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied. Data are percentages of programs.

[b] Analysis based on all programs.

## VII. APPENDICES

Appendix A

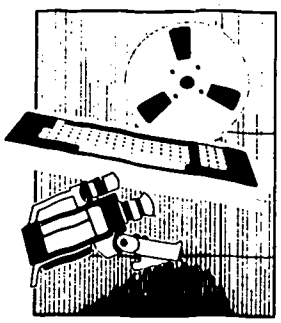
HEUS-85 Survey Instruments

The following instruments are one-color copies of the survey questionnaires that were used for the study. The surveys were color-coded (gray for Computers for Instruction, yellow for Instructional Video/Audio, and tan for Teacher Education) and were printed in two colors so that the instructions were easily differentiated from the questions.

Please return within one week of receipt to: Don King, Research Triangle Institute, P.O. Box 12194, Research Triangle Park, North Carolina 27709

# A Study of the Educational Uses of Technology in Higher Education

# Computers For Instruction Questionnaire



Corporation for Public Broadcasting

Endorsed by:

American Association of Community and Junior Colleges (AACJC)

American Association of State Colleges and Universities (AASCU)

American Council on Education (ACE)

Association of American Colleges (AAC)

Association of American Universities (AAU)

Association of Physical Plant Administrators of Universities and Colleges (APPAUC)

Council of Independent Colleges (CIC)

National Association of State Universities and Land Grant Colleges (NASULGC)

National University Continuing Education Association (NUCEA)

All information which would permit identification of the individual respondent or institution will be held in strict confidence, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any purposes without the respondent's expressed permission, except as required by law.

1. **Which best describes your institution?**

**(Circle one.)**

A single-campus institution ..... 1
A branch campus of a parent institution ..... 2
A main campus with one or more branch campuses ..... 3
One of the administratively equal campuses of a multi-campus institution ..... 4

**Please Note:** *If your institution is part of a multi-campus or multi-unit institution, please respond to the items in this questionnaire for* ***only*** *the specific institutional unit identified on the label affixed to the back cover.*

2. **What kinds of degree programs are offered at your institution?** **(Circle all that apply.)**

a. Less than a baccalaureate degree (e.g., Associate degree, 1- or 2-year certificate) ..... 1
b. Baccalaureate degree (e.g., A.B., B.S.) ..... 2
c. Post-baccalaureate degree (e.g., M.S., Ph.D., D.D.S., M.D., J.D.) ..... 3
d. Other professional degree at the baccalaureate level ..... 4
e. Other *(Please specify)* _____ ..... 5

3. **Which of the following major areas or programs of study are offered to undergraduate students at your institution?**

**(Circle all that apply.)**

a. Liberal Arts ..... 1
b. Education ..... 2
c. Behavioral Sciences ..... 3
d. Social Sciences (including History) ..... 4
e. Business ..... 5
f. Mathematics ..... 6
g. Computer Sciences ..... 7
h. Life Sciences ..... 8
i. Physical Sciences ..... 9
j. Engineering ..... 10
k. Design ..... 11
l. Fine Arts ..... 12
m. Remedial Basic Studies (reading, math, writing) ..... 13
n. Pre-medical or pre-dental ..... 14
o. Pre-law ..... 15
p. Other *(please specify)* _____ ..... 16
q. No undergraduate programs ..... 17

4. **Please indicate, to the best of your judgment, the ways that students, faculty, and administrators at your institution use computers.**

| | | (Circle only one on each line.) | | |
|---|---|---|---|---|
| | **Students** | **Used** | **Not Used** | **Don't Know** |
| a. | For hands-on use in learning **about** the use of computers (e.g., introduction to computers, computer literacy) | 1 | 2 | 3 |
| b. | Programmed exercises, tutorials, drills (computer as tutor) | 1 | 2 | 3 |
| c. | Instructional use of general-purpose applications software (e.g., spread sheets, word processing packages, statistical packages) | 1 | 2 | 3 |
| d. | Instructional communications with faculty (e.g., conferencing or electronic mail) | 1 | 2 | 3 |
| e. | Taking exams or tests | 1 | 2 | 3 |
| f. | Control of laboratory instruments, apparatus, equipment, machinery | 1 | 2 | 3 |
| g. | Research and bibliographic | 1 | 2 | 3 |
| | **Faculty** | | | |
| h. | For hands-on use in learning **about** the use of computers (i.e., computer training as part of faculty development) | 1 | 2 | 3 |
| i. | Instructional use of general-purpose applications software (e.g., spread sheets, word processing packages, statistical packages) | 1 | 2 | 3 |
| j. | Instructional communications with student (e.g., conferencing or electronic mail) | 1 | 2 | 3 |
| k. | Administrative use of general-purpose applications software | 1 | 2 | 3 |
| l. | Administrative use of special-purpose software (e.g., recordkeeping, electronic mail) | 1 | 2 | 3 |
| m. | Instructional management and assessment (e.g., testing, feedback to students, planning individualized instruction) | 1 | 2 | 3 |
| n. | Control of laboratory instruments, apparatus, equipment, machinery | 1 | 2 | 3 |
| o. | Research and bibliographic | 1 | 2 | 3 |
| | **Administrators** | | | |
| p. | Administrative use of general-purpose applications software | 1 | 2 | 3 |
| q. | Administrative use of special-purpose software | 1 | 2 | 3 |
| r. | Counseling (e.g., career planning) | 1 | 2 | 3 |
| s. | Outreach (e.g., providing noninstructional services or information about the college to the community) | 1 | 2 | 3 |
| t. | Electronic publishing | 1 | 2 | 3 |
| u. | Archiving or bulk storage of library materials in electronic form | 1 | 2 | 3 |

5. **From the list in Q.4, select the one type of use which, to your knowledge, is the fastest growing use among each user group at your institution, and write the corresponding letters (a-u) below.**

a. Students (letters a-g) _____

b. Faculty (letters h-o) _____

c. Administrators (letters p-u) _____

6. **Which of the following administrative systems at your institution are now computerized or scheduled to be computerized next year?**

(Circle all that apply under each column.)

| | Currently | Next Year |
|---|---|---|
| a. Course offerings | 1 | 1 |
| b. Standardized test scores (e.g., SAT, GRE) | 2 | 2 |
| c. Student grade records | 3 | 3 |
| d. Enrollment projections | 4 | 4 |
| e. Student financial aid program | 5 | 5 |
| f. Fund raising | 6 | 6 |
| g. Payroll | 7 | 7 |
| h. Other *(please specify)* _____ | 8 | 8 |
| i. None of the above | 9 | 9 |

7. **Does your institution have a task force, study group, or individual administrator designated to look into the best uses and necessary technical facilities for use of audio, video, and computers for instructional purposes?**

(Circle one.)

| | |
|---|---|
| No | 1 |
| Yes | 2 |

8. **Which of the following computer facilities/equipment are available for use by faculty and/or students in instruction or instructional management and assessment at your institution?**

(Circle all that apply.)

| | |
|---|---|
| a. Institution's mainframes or minicomputers | 1 |
| b. Regional public computer service | 2 |
| c. Commercial computer service | 3 |
| d. Microcomputers (stand-alone) | 4 |
| e. Local area networks | 5 |
| f. Other *(please specify)* _____ | 6 |
| g. None of the above | 7 |
| h. Don't know | 8 |

9. **Are microcomputers or mainframes/minis being used with video, audio, videotex, or graphics peripherals at your institution?**

(Circle all that apply under each column.)

| | Mainframes/ Minis | Microcomputers |
|---|---|---|
| a. No use with any of these peripherals | 1 | 1 |
| b. Yes, with videocassette recorders or linear access videodisc players | 2 | 2 |
| c. Yes, with random access videodisc players | 3 | 3 |
| d. Yes, with compact audio discs | 4 | 4 |
| e. Yes, with voice synthesizers | 5 | 5 |
| f. Yes, with music synthesizers | 6 | 6 |
| g. Yes, with videotex terminals | 7 | 7 |
| h. Yes, with graphics peripherals (e.g., plotters, image digitizers) | 8 | 8 |

**10. Does your institution have a central collection or collections that contain any of the following for use by faculty or students?**

**(Circle all that apply.)**

a. Business applications software for micros (e.g., Visicalc) ..... 1
b. Word processing software for micros (e.g., Wordstar) ..... 2
c. Computer-based instructional management software for micros ..... 3
d. Statistical analysis packages for micros ..... 4
e. Data base systems for micros (e.g., dBase II) ..... 5
f. Communications software for micros (e.g., Visilink) ..... 6
g. Microcomputer software documentation ..... 7
h. Mainframe/minicomputer software documentation ..... 8
i. None of the above ..... 9

**11. What kinds of software for instructional use are installed on a mainframe or minicomputer available to users at your institution?**

**(Circle all that apply.)**

a. Statistical analysis packages (e.g., SAS, SPSS, BMD) ..... 1
b. Simulation software ..... 2
c. Data base management systems (e.g., System 2000, Total) ..... 3
d. Other *(please specify)* _____ ..... 4
e. None of the above ..... 5

**12. Does your institution offer any courses this year (1984-85) in which students are asked to use software or data bases that are installed on a mainframe or minicomputer?**

**(Circle one.)**

No ..... 1
Yes ..... 2 → **(How many courses? _____ )**

**13. Can students and/or faculty access any mainframe or minicomputer using terminals from outside the institution (i.e., dial-up access)?**

**(Circle one.)**

No ..... 1
Yes ..... 2

**14. Is your institution a member of any formal consortium or informal cooperative arrangement of colleges/ organizations offering, producing, or sharing computer-related services or materials?**

**(Circle one.)**

No ..... 1 → *GO TO Q.18*
Yes *[specify complete name(s)]* _____

_____ ..... 2 → *CONTINUE WITH Q.15*

**15. How long has your institution been a member of this consortium/cooperative arrangement? (If membership in more than one consortium/cooperative arrangement, indicate number of years for oldest membership.)**

Number of years in consortium/cooperative arrangement _____

16. a. **For the consortium/cooperative arrangement of which your institution has been a member for the longest time, does membership generally provide computer-related services which meet your institution's needs and expectations?**

**(Circle one.)**

No ..... 1
Yes ..... 2

b. **Do you expect your institution to remain a member of this consortium/cooperative arrangement during the next three years?**

**(Circle one.)**

No ..... 1
Yes ..... 2

17. **What computer-related services are provided by the consortia/cooperative arrangements to which your institution belongs?**

**(Circle all that apply.)**

a. Group hardware buying ..... 1
b. Group software buying ..... 2
c. Software evaluation ..... 3
d. Distribution of software developed by member institutions ..... 4
e. Assistance in networking hardware ..... 5
f. Providing instructional or training services ..... 6
g. Cross-registration for computer courses ..... 7
h. Library-related services ..... 8
i. Large mainframe access ..... 9
j. Other *(please specify)* _____ ..... 10

18. **Are there any computer literacy prerequisites in any non-Computer Science courses at your institution?**

**(Circle one.)**

No ..... 1
Yes ..... 2

19. **Do student transcripts provided by your institution explicitly report any indication of the student's attainment of computer literacy or proficiency?**

**(Circle one.)**

No ..... 1
Yes ..... 2

20. **Does your institution have formal (written) policies regarding basic computer literacy or skills that all undergraduate students should achieve?**

**(Circle one.)**

Does not apply. No undergraduate programs ..... 1
No, there are NO such formal policies ..... 2
→ *GO TO Q.23*

Yes, for all undergraduate students ..... 3 → *GO TO Q.22*
Yes, but only for undergraduate students majoring in certain disciplines .... 4 → *CONTINUE WITH Q.21*

**21. For which major areas of programs of study is computer literacy a requirement for undergraduate students?**

**(Circle all that apply.)**

a. Liberal Arts ..... 1
b. Education ..... 2
c. Behavioral sciences ..... 3
d. Social sciences (including history) ..... 4
e. Business ..... 5
f. Mathematics ..... 6
g. Computer sciences ..... 7
h. Life sciences ..... 8
i. Physical sciences ..... 9
j. Engineering ..... 10
k. Design ..... 11
l. Fine arts ..... 12
m. Remedial basic studies (reading, math, writing) ..... 13
n. Pre-medical or pre-dental ..... 14
o. Pre-law ..... 15
p. Other *(please specify)* _____ ..... 16

**22. Which of the following elements do your institution's formal computer literacy policies include?**

**(Circle all that apply.)**

a. Students should take an introductory course in computers for credit ..... 1
b. Students should be able to write a simple computer program ..... 2
c. Students should be able to document their own programming ..... 3
d. Students should be able to test and debug simple programs ..... 4
e. Students should know how to develop simple computer-oriented algorithms ..... 5
f. Students should be able to document their own algorithms ..... 6
g. Students should know general operations or procedures for using canned software (e.g., loading, backup, listing, saving, deleting, running programs) ..... 7
h. Students should know what general types of problems are (and are not) amenable to computer solution ..... 8
i. Students should understand the potential use of large bodies of quantitative data in a particular field of study ..... 9
j. Students should be familiar with the social implications of computer use (e.g., job loss from automation) ..... 10
k. Students should be familiar with the ethical issues associated with computer use (e.g., data privacy, copyrights, electronic trespass) ..... 11
l. Other *(please specify)* _____ ..... 12

**23. Which of the following areas are covered by your institution's formal policies concerning computer use?**

**(Circle all that apply.)**

a. Development of computer software by faculty members ..... 1
b. Networking of hardware and software ..... 2
c. Access to computers by faculty ..... 3
d. Access to computers by students ..... 4
e. Conversion of library holdings to electronic form ..... 5
f. Rewiring of dormitories to accommodate computers ..... 6
g. Rewiring of faculty offices to accommodate computers ..... 7
h. Duplication of copyrighted software ..... 8
i. Data security (loss prevention and safeguards against intrusion) ..... 9
j. Privacy or confidentiality ..... 10
k. Other *(please specify)* _____ ..... 11
l. Institution has NO formal policies governing computer use ..... 12

**24. Does your institution offer, directly or through arrangement with outside vendors, any special assistance to students or faculty in buying computer hardware (e.g., discount prices, loans, grants, group purchase arrangements)?**

**(Circle all that apply.)**

a. No ..... 1
b. Yes, to students ..... 2
c. Yes, to faculty ..... 3

**25. Does your institution require undergraduate students to own or acquire a microcomputer for use in their coursework or study?**

**(Circle one.)**

Yes, for all students ..... 1
Yes, for undergraduate students in certain fields of study ..... 2
} → *GO TO Q.27*

No, there is NO such requirement ..... 3
Does not apply. No undergraduate programs ..... 4
} → *CONTINUE WITH Q.26*

**26. Is your institution currently planning or considering adoption of such a policy?**

**(Circle one.)**

No ..... 1
Yes ..... 2

ur institution, who has primary responsibility for each of the following activities? (Circle only one on each line.)

| | Board of Trustees | Administrative Officer (e.g., CEO, Comptroller) | Academic Officer (e.g., Provost, Chancellor, or Academic Dean) | Department Head | Faculty Committee | Individual Faculty | Computer Center Staff | Not Applicable |
|---|---|---|---|---|---|---|---|---|
| Planning faculty training for instructional use of computers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Selecting computer mainframe/ mini hardware (brand and supplier) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Selecting microcomputer hardware (brand and supplier) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Selecting general use software for mainframe/mini computer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Selecting course-specific software for mainframe/mini computer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Selecting general use software for microcomputers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Selecting course-specific software for microcomputers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Deciding what computer-related skills and knowledges are to be learned by students | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Representing institution in computer consortium decision making | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Establishment of incentives/ rewards for software development by faculty | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Determining frequency and amount of student use of computers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Establishing any separate charges for student use of computers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

**28. Which of the following incentives does your institution normally provide for faculty who develop computer programs?**

**(Circle all that apply.)**

a. Faculty share in the royalties ..... 1
b. Faculty retain rights to programs they develop ..... 2
c. Reduced course load for faculty ..... 3
d. Assistance in obtaining grants or contracts ..... 4
e. Legal assistance ..... 5
f. Clerical/logistical support ..... 6
g. Additional compensation ..... 7
h. Other *(please specify)* _____ ..... 8
i. Institution provides NO special incentives ..... 9

**29. Does your institution currently offer training for faculty in the use of computers for instruction?**

**(Circle one.)**

No ..... 1 → *GO TO Q.33*
Yes ..... 2 → *CONTINUE WITH Q.30*

**30. Which of the following types of faculty training does your institution offer?**

**(Circle all that apply.)**

a. Training in the operation of equipment ..... 1
b. Training in the operation of "canned" applications software ..... 2
c. Training in the selection of software ..... 3
d. Training in the integration of student computer use with general instructional objectives ..... 4
e. Training in the production or design of software ..... 5
f. Training in the use of computers for instructional management and testing ..... 6
g. Training of some kind in general instructional methods ..... 7

**31. Who conducts this faculty training in computers?**

**(Circle all that apply.)**

a. Instructors from institution faculty ..... 1
b. Instructors from institution staff ..... 2
c. User groups from within the institution ..... 3
d. Consortia staff ..... 4
e. Manufacturer's representatives ..... 5
f. Software producer's representatives ..... 6
g. Outside consultants ..... 7
h. Other *(please specify)* _____ ..... 8

**32. How long does this faculty training in computers typically run?**

_____ number of hours

33. **Does your institution provide any organized expert assistance (e.g., special staff, faculty committee) for faculty who wish to use computers for instructional purposes?**

**(Circle all that apply.)**

a. No ..... 1
b. Yes, in the evaluation of software ..... 2
c. Yes, in the acquisition of rights to use software ..... 3
d. Yes, technical assistance in the operation of equipment ..... 4
e. Yes, expert assistance in the integration of student computer use with general instructional objectives ..... 5
f. Yes, assistance in the use of computers for instructional management and testing ..... 6

34. **In your judgment, which of the following is needed most by students, faculty, and administrators at your institution?**

**(Circle one number under each column.)**

| | Students | Faculty | Administrators |
|---|---|---|---|
| More computer software | 1 | 1 | 1 |
| More work stations or terminals | 2 | 2 | 2 |
| More storage capacity (i.e., main memory) | 3 | 3 | 3 |
| More peripherals (i.e., printers, modems, disk drives) | 4 | 4 | 4 |

35. **In total, how many mainframe/minicomputers and stand-alone microcomputers are currently available for use by students, faculty, and administrators at your institution? (If uncertain, please give your best estimate.)**

a. **Number of mainframe/minicomputers available:** _____

b. **Number of stand-alone microcomputers available**

**(Circle one.)**

10 or fewer ..... 1
11 to 50 ..... 2
51 to 100 ..... 3
101 to 250 ..... 4
More than 250 ..... 5

36. **Which of the following describe the trend in computer resources at your institution over the past three years?**

**(Circle all that apply.)**

a. Computer resource configuration at the institution has remained about the same ..... 1
b. The institution has shifted from reliance on use of one to use of several mainframe/minicomputers ..... 2
c. Many computer activities have been diverted from mainframe/minicomputers to stand-alone microcomputers on-campus ..... 3

37. **Over the next two years, do you realistically expect funding for instructional use of computers from each of the following sources listed below to increase, decrease, or remain the same?**

(Circle only one on each line.)

| | Increase | Remain the Same | Decrease | Don't Know |
|---|---|---|---|---|
| a. General operating funds of the institution | 1 | 2 | 3 | 4 |
| b. Internally generated funds (e.g., sale or licensing of institutionally produced software) | 1 | 2 | 3 | 4 |
| c. Special fees for computer use | 1 | 2 | 3 | 4 |
| d. Special state appropriations | 1 | 2 | 3 | 4 |
| e. Non-federal grants and contracts (including business and foundations) | 1 | 2 | 3 | 4 |
| f. Federal grants and contracts | 1 | 2 | 3 | 4 |

38. **Over the next two years, will your institution's expenditures for computers used in instruction (equipment, software, and personnel) increase, decrease, or remain the same?**

(Circle only one on each line.)

| | Increase | Remain the Same | Decrease | Don't Know |
|---|---|---|---|---|
| a. Equipment | 1 | 2 | 3 | 4 |
| b. Software | 1 | 2 | 3 | 4 |
| c. Personnel | 1 | 2 | 3 | 4 |

39. **Of the combined total computer time used by students, faculty, and administrators at your institution, about what percent is for each of the following purposes:**

a. Administration _____ %

b. Instruction _____ %

c. Research _____ %

d. Other *(please specify)* _____ _____ %

100%

*Thank you for taking the time to fill out this questionnaire.*

**If we should need to contact you regarding the questionnaire, what is the best time to call?** _____

**What is your telephone number?**

☐☐☐ ☐☐☐ – ☐☐☐☐

Area Code Number

*To receive a summary report of the findings of this study, check here ☐ and supply us with your:*

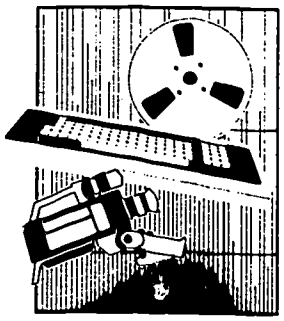
Name: _____

Address: _____

Please return within one week of receipt to: Don King, Research Triangle Institute, P.O. Box 12194, Research Triangle Park, North Carolina 27709

# A Study of the Educational Uses of Technology in Higher Education

# Instructional Video/Audio Questionnaire



Corporation for Public Broadcasting

Endorsed by:

American Association of Community and Junior Colleges (AACJC)

American Association of State Colleges and Universities (AASCU)

American Council on Education (ACE)

Association of American Colleges (AAC)

Association of American Universities (AAU)

Association of Physical Plant Administrators of Universities and Colleges (APPAUC)

Council of Independent Colleges (CIC)

National Association of State Universities and Land Grant Colleges (NASULGC)

National University Continuing Education Association (NUCEA)

All information which would permit identification of the individual respondent or institution will be held in strict confidence, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any purposes without the respondent's expressed permission, except as required by law.

## SECTION A: GENERAL TYPES OF USE

3. **Please indicate, to the best of your judgment, the extent to which faculty or administrators at your institution use video and audio technologies in the following ways.**

(Circle only one on each line.)

| | Widely Used (by ¼ or more) | Less Widely Used (by fewer than ¼) | Not Used | Don't Know |
|---|---|---|---|---|
| **Video Technologies** | | | | |
| a. One-way presentation of instruction to students on campus | 1 | 2 | 3 | 4 |
| b. One-way presentation of instruction to students off campus | 1 | 2 | 3 | 4 |
| c. Conferencing or two-way communications between faculty and off-campus students | 1 | 2 | 3 | 4 |
| d. Conferencing or two-way communications between faculty and students in multiple locations on campus | 1 | 2 | 3 | 4 |
| e. Pictoral enhancement of interactive programmed instruction using computers | 1 | 2 | 3 | 4 |
| f. Counseling (e.g., role-playing, self-reflection) | 1 | 2 | 3 | 4 |
| g. Outreach (e.g., providing non-instructional services, community forums, or information about the college to the community) | 1 | 2 | 3 | 4 |
| h. Promotion/recruitment (i.e., to attract new students to the college) | 1 | 2 | 3 | 4 |
| i. Staff development | 1 | 2 | 3 | 4 |
| j. Other *(specify)*_____ | 1 | 2 | 3 | 4 |
| **Audio Technologies** | | | | |
| k. One-way presentation of instruction to students on campus | 1 | 2 | 3 | 4 |
| l. One-way presentation of instruction to students off campus | 1 | 2 | 3 | 4 |
| m. Conferencing or two-way communications between faculty and off-campus students | 1 | 2 | 3 | 4 |
| n. Conferencing or two-way communications between faculty and students in multiple locations on campus | 1 | 2 | 3 | 4 |
| o. Sound enhancement of interactive programmed instruction using computers | 1 | 2 | 3 | 4 |
| p. Counseling | 1 | 2 | 3 | 4 |
| q. Outreach | 1 | 2 | 3 | 4 |
| r. Promotion/recruitment | 1 | 2 | 3 | 4 |
| s. Staff development | 1 | 2 | 3 | 4 |
| t. Other *(specify)*_____ | 1 | 2 | 3 | 4 |

## SECTION B: VIDEO TELECOURSE AND AUDIO COURSE OFFERINGS

**Note:** The questions in this section (Q.4 through Q.26) ask about full video telecourses and audio courses. For purposes of this survey, these terms are defined as follows:

**Video Telecourse:** Refers to credit or non-credit courses in which instruction makes substantial use of video technologies. A telecourse may or may not also involve substantial use of text books or other print materials and regular student communication with an instructor.

**Audio Course:** Refers to credit or non-credit courses in which instruction makes substantial use of audio technologies. An audio course may or may not also involve substantial use of text books or other print materials and regular student communication with an instructor.

4. **Is your institution offering any video telecourses or audio courses during the current (1984-85) school year?**

**(Circle one.)**

No ..... 1 → *GO TO Q. 23*
Yes ..... 2 → *CONTINUE WITH Q.5*

5. **How many video telecourses (for credit and non-credit) is your institution offering during the 1984-85 school year?**

**(If none, enter zero)**

a. Total number of video telecourses for degree credits ..... _____
b. Total number of video telecourses for continuing education units ..... _____
c. Total number of non-credit video telecourses ..... _____

*If your institution does NOT offer any VIDEO telecourses during the 1984-85 school year, GO TO Q.9; otherwise, CONTINUE WITH Q.6.*

6. **How many students have been enrolled in these video telecourses during the 1984-85 school year?** *(NOTE: Please recall that you should respond only for the specific institutional unit identified on the back cover of the questionnaire. If uncertain, please give your best estimate.)*

**(If none, enter zero)**

a. Total number of students enrolled for degree credits ..... _____
b. Total number of students enrolled for continuing education units ..... _____
c. Total number of students enrolled not for credit ..... _____

7. **IN COLUMN A, indicate any video telecourses that your institution has offered during the 1984-85 school year (e.g., Chemistry, English as a second language, History).**

**IN COLUMN B, indicate the level at which each course is offered (i.e., R = remedial, L = lower division, U = upper division, G = graduate).**

**IN COLUMN C, for each course listed, indicate the title of the program series used (e.g., The Brain, The Write Course).**

**IN COLUMN D, indicate the number of students enrolled during the year in each course.**

| | A<br>Subject of Course | B<br>Level | C<br>Title of Program Series* | D<br>Number of Students Enrolled |
|---|---|---|---|---|
| a. | | | | |
| b. | | | | |
| c. | | | | |
| d. | | | | |
| e. | | | | |
| f. | | | | |
| g. | | | | |
| h. | | | | |
| i. | | | | |
| j. | | | | |

*If closed-circuit or ITFS telecourses of the live camera-in-the-classroom type, or if no other program title exists, simply write in "local."

NOTE: Attach an additional sheet, labeled Q.7, if necessary.

8. **How are the video telecourses offered by your institution distributed?**

**(Circle all that apply.)**

a. Public television station ..... 1
b. Commercial television station ..... 2
c. Cable television ..... 3
d. Campus closed circuit system ..... 4
e. Instructional Television Fixed Service (ITFS) ..... 5
f. State or regional closed circuit system ..... 6
g. Pre-recorded video cassette or videodisc ..... 7
h. Other *(please specify)* _____ 8

9. **How many AUDIO courses (for credit and non-credit) is your institution offering during the 1984-85 school year?**

**(If none, enter zero.)**

a. Total number of Audio courses for Degree Credits ..... _____

b. Total number of Audio courses for Continuing Education units ..... _____

c. Total number of Non-credit Audio Courses ..... _____

*If your institution does NOT offer any AUDIO courses during the 1984-85 school year, GO TO Q.13; otherwise, CONTINUE WITH Q.10.*

10. **How many students have been enrolled in these audio courses during the 1984-85 school year?** *(NOTE: Please recall that you should respond only for the specific institutional unit identified on the back cover of the questionnaire. If uncertain, please give your best estimate.)*

**(If none, enter zero.)**

a. Total number of students enrolled for degree credits ..... _____

b. Total number of students enrolled for continuing education units ..... _____

c. Total number of students enrolled not for credit ..... _____

11. **IN COLUMN A, indicate any audio courses that your institution has offered during the 1984-85 school year (e.g., chemistry, English as a second language, history)**

**IN COLUMN B, indicate the level at which each course is offered (i.e., R = remedial, L = lower division, U = upper division, G = graduate).**

**IN COLUMN C, for each course listed, indicate the title of the program series used (e.g., The Challenge of China and Japan, The World of F. Scott Fitzgerald).**

**IN COLUMN D, indicate the number of students enrolled during the year in each course.**

| | A<br>Subject of Course | B<br>Level | C<br>Title of Program Series* | D<br>Number of Students Enrolled |
|---|---|---|---|---|
| a. | | | | |
| b. | | | | |
| c. | | | | |
| d. | | | | |
| e. | | | | |
| f. | | | | |
| g. | | | | |
| h. | | | | |
| i. | | | | |
| j. | | | | |

*If audio use is primarily audio conferencing, or no other program title exists, simply write in "local."

NOTE: Attach an additional sheet, labeled Q.11, if necessary.

12. **How are the audio courses offered by your institution distributed?** **(Circle all that apply)**

a. Public radio station ..... 1
b. Commercial radio station ..... 2
c. Cable radio ..... 3
d. SCA or FM subchannel ..... 4
e. Pre-recorded audiocassette or records ..... 5
f. Other *(please specify)* _____ ..... 6

13. **Does your institution try to arrange the scheduling of video telecourses or audio courses at times outside the normal hours of instruction for non-media courses?**

**(Circle one under each column.)**

| | Video | Audio |
|---|---|---|
| No | 1 | 1 |
| Yes | 2 | 2 |
| Does not apply | 3 | 3 |

(Circle one under each column.)

| | Video | Audio |
|---|---|---|
| No, the institution does not own a broadcast station | 1 | 1 |
| No, the institution does not use its own broadcast station to distribute instructional programs | 2 | 2 |
| Yes | 3 | 3 |

15. **Does your institution receive discounted or free program time for distributing instructional programs from any broadcast or cable outlet?**

(Circle all that apply under each column.)

| | Video | Audio |
|---|---|---|
| a. No | 1 | 1 |
| b. Yes, free program broadcast time | 2 | 2 |
| c. Yes, reduced cost program broadcast time | 3 | 3 |
| d. Yes, cable access channel(s) | 4 | 4 |

16. **For video or audio courses offered by your institution, are there parallel non-media courses for the same subjects and levels in which students may choose to enroll?**

(Circle one under each column.)

| | Video | Audio |
|---|---|---|
| No | 1 | 1 |
| Yes, for every course | 2 | 2 |
| Yes, but only for certain courses | 3 | 3 |
| Does not apply | 4 | 4 |

17. **Are the video and audio courses offered by your institution to students off-campus also made available to students on-campus?**

(Circle one under each column.)

| | Video | Audio |
|---|---|---|
| No | 1 | 1 |
| Yes, for every course | 2 | 2 |
| Yes, but only for certain courses | 3 | 3 |
| Does not apply | 4 | 4 |

18. **Are there instructors with whom students can interact on a regular basis assigned to each video telecourse or audio course offered by your institution?**

(Circle one.)

| | | |
|---|---|---|
| No | 1 | → *GO TO Q. 20* |
| Yes, for every course | 2 | → *CONTINUE WITH Q.19* |
| Yes, but only for certain courses | 3 | |

19. **What is the primary means of communication with faculty responsible for the video telecourse or audio course?**

(Circle one.)

| | |
|---|---|
| Telephone | 1 |
| In person | 2 |
| Electronic mail | 3 |
| Correspondence | 4 |
| Other *(please specify)* _____ | 5 |

20. **Are tuition and fees charged by your institution for enrollment in video or audio courses generally higher, lower, or about the same as those charged for non-media courses?**

| | (Circle one under each column.) Video | Audio |
|---|---|---|
| Generally higher | 1 | 1 |
| Generally about the same | 2 | 2 |
| Generally lower | 3 | 3 |
| Does not apply | 4 | 4 |

21. **Does your institution's catalog or schedule of courses identify any courses as being offered predominantly through video or audio technologies?**

| | (Circle one.) | |
|---|---|---|
| No | 1 → | *GO TO Q. 23* |
| Yes | 2 → | *CONTINUE WITH Q.22* |

22. **If yes, do student transcripts distinguish such courses from other courses?**

| | (Circle one.) |
|---|---|
| No | 1 |
| Yes | 2 |

23. **What are your institution's plans regarding video telecourses and audio courses within the next two years?**

| | (Circle one under each column.) On-campus | Off-campus |
|---|---|---|
| **a. Video** | | |
| Expect to expand the use of mediated courses | 1 | 1 |
| Expect the use of mediated courses to remain about the same | 2 | 2 |
| Expect to decrease the use of mediated courses | 3 | 3 |

| | (Circle one under each column.) On-campus | Off-campus |
|---|---|---|
| **b. Audio** | | |
| Expect to expand the use of mediated courses | 1 | 1 |
| Expect the use of mediated courses to remain about the same | 2 | 2 |
| Expect to decrease the use of mediated courses | 3 | 3 |

24. **Do you expect ENROLLMENTS in video telecourses and audio courses to increase or decrease in the next two years?**

| | (Circle one under each column.) Video | Audio |
|---|---|---|
| Increase | 1 | 1 |
| Decrease | 2 | 2 |
| Remain about the same | 3 | 3 |

25. **Which of the following best describes your institution's policy regarding the transfer of credits earned by students through video or audio telecourses?**

| | (Circle one under each column.) Video | Audio |
|---|---|---|
| We do not normally recognize and accept telecourse credits earned elsewhere | 1 | 1 |
| We normally recognize and accept telecourse credits earned elsewhere | 2 | 2 |
| Telecourse credits earned elsewhere are recognized on a case-by-case or department-by-department basis | 3 | 3 |

**26. Does your institution's policy regarding the recognition of credits earned by video telecourse or audio course distinguish between requirements for a major field of study and other degree requirements?**

| | (Circle one under each column.) Video | Audio |
|---|---|---|
| Institution policy makes no such distinction | 1 | 1 |
| Institution policy restricts the use of telecourse credits in meeting requirements for a major field of study | 2 | 2 |
| Institutional policy varies from department to department | 3 | 3 |
| Institution has not settled policy toward use of telecourse credits in meeting degree requirements | 4 | 4 |

## SECTION C: USES FOR INTERACTIVE COMMUNICATIONS

**27. During the current (1984-85) school year, has closed-circuit television or ITFS of the live camera-in-the-classroom type been used at your institution for instructional purposes?**

(Circle one.)

Don't know ..... 1 } → *GO TO Q.30*
No ..... 2 }
Yes ..... 3 → *CONTINUE WITH Q.28*

**28. If yes, what kind of student interaction with the instructor is typically possible?**

(Circle all that apply.)

a. No simultaneous interaction ..... 1
b. On-line computer interaction ..... 2
c. Simultaneous audio-only interaction ..... 3
d. Simultaneous audio and video interaction ..... 4
e. Don't know ..... 5

**29. Typically, in use of live camera-in-the-classroom television, are either the on-camera instructor or any of the students viewing the class located outside the institution?**

(Circle all that apply.)

a. No ..... 1
b. Yes, on-camera instructor is located elsewhere ..... 2
c. Yes, some students viewing are located elsewhere ..... 3
d. Don't know ..... 4

**30. During the current (1984-85) school year, has audio conferencing been used at your institution for instructional purposes?**

(Circle one.)

Don't know ..... 1 } → *GO TO Q.32*
No ..... 2 }
Yes ..... 3 → *CONTINUE WITH Q.31*

**31. If yes, are other interactive media typically used with audio conferencing for instructional purposes?**

(Circle all that apply.)

a. No ..... 1
b. Yes, with visuals (e.g., electronic blackboard, facsimile transmission) ..... 2
c. Yes, computer conferencing ..... 3
d. Don't know ..... 4

## SECTION D: SUPPORT ACTIVITIES

**32. Does your institution offer training for faculty in the use of video technologies for instruction?**

**(Circle one.)**

No ..... 1 → *GO TO Q.35*
Yes, formal, structured training ..... 2
Yes, informal training ..... 3 } → *CONTINUE WITH Q.33*

**33. Which of the following types of faculty training does your institution offer?**

**(Circle all that apply.)**

a. Training in the selection of video/TV programs for use in instruction ..... 1
b. Training in the production or design of video/TV programs for use in instruction ..... 2
c. Training in the integration of video use with overall curriculum content ..... 3
d. Training in the integration of video use with overall instructional methods ..... 4
e. Any training at all in general instructional methods ..... 5
f. Training in the operation of equipment ..... 6

**34. How long does the faculty training typically run?** _____ (Number of hours)

**35. Does you institution provide any organized expert assistance (e.g., special staff, faculty committee) for faculty who wish to use video for instructional purposes?**

**(Circle all that apply.)**

a. No ..... 1
b. Yes, in the evaluation of program materials ..... 2
c. Yes, in the acquisition of rights to use program materials ..... 3
d. Yes, technical assistance in the operation of equipment ..... 4
e. Yes, expert assistance in the integration of student video use with overall curriculum content ..... 5
f. Yes, expert assistance in the integration of student video use with overall instructional methods ... 6
g. Yes, other assistance *(please specify)* _____ ..... 7

**36. Is your institution a member of any formal consortium or informal cooperative arrangement of colleges/ organizations offering, producing, or sharing video/TV programs or related services?**

**(Circle one.)**

No ..... 1 → *GO TO Q.40*
Yes, *(specify complete name(s))* _____ 2 → *CONTINUE WITH Q.37*
_____

**37. How long has your institution been a member of this consortium/cooperative arrangement? (If membership in more than one consortium/cooperative arrangement, indicate number of years for oldest membership.)**

Number of years in consortium/cooperative arrangement: _____

**38. a. For the consortium/cooperative arrangement of which your institution has been a member for the longest time, does membership generally provide television-related services which meet your institution's needs and expectations?**

**(Circle one.)**

No ..... 1
Yes ..... 2

**b. Do you expect your institution to remain a member of the consortium/cooperative arrangement during the next three years?**

**(Circle one.)**

No ..... 1
Yes ..... 2

39. **What television-related services are provided by the consortia/cooperative arrangements to which your institution belongs?**

(Circle all that apply.)

a. Television program previews ..... 1
b. Television program exchange ..... 2
c. Staff or faculty exchange ..... 3
d. Original productions ..... 4
e. Staff and faculty development ..... 5
f. Group buy/acquisition (program rights) ..... 6
g. Other *(please specify)* _____ ..... 7

40. **Is your institution a member of any formal consortium or informal cooperative arrangement of colleges/ organizations offering, producing, or sharing audio/radio programs or related services?**

(Circle one.)

No ..... 1
Yes *(specify complete name(s)* _____ ..... 2

_____

## SECTION E: AVAILABILITY OF EQUIPMENT AND FACILITIES

41. **Does your institution have instructional materials centers that contain any of the following for use by faculty or students?**

(Circle all that apply.)

a. Videocassettes/tapes or videodiscs ..... 1
b. Interactive videodisc packages with computer software ..... 2
c. Audiocassettes/tapes or records (music only) ..... 3
d. Audiocassettes/tapes or records (excluding music only) ..... 4
e. None of the above ..... 5

42. **Which of the following centrai reception facilities are available at your institution?**

(Circle all that apply.)

a. Master TV antenna ..... 1
b. Community cable system drop(s) ..... 2
c. ITFS reception equipment ..... 3
d. Fixed satellite receive-only dish ..... 4
e. Rotatable satellite receive-only dish ..... 5
f. Other microwave reception equipment ..... 6
g. Satellite transmission antenna ("uplink") ..... 7
h. None of the above ..... 8

43. **Which of the following video or audio distribution/exhibition facilities are available for instructional purposes at your institution?**

(Circle all that apply.)

a. Campus closed-circuit TV (on-campus origination) ..... 1
b. Campus buildings wired by community cable TV system ..... 2
c. Special video or film screening/projection room ..... 3
d. ITFS transmission equipment ..... 4
e. Non-commercial television broadcast station ..... 5
f. Non-commercial radio broadcast station ..... 6
g. Community cable TV system educational/access channels (No. of channels _____) ..... 7
h. Audio conferencing facilities ..... 8
i. Music/speech synthesizers ..... 9
j. Language labs ..... 10
k. Music listening rooms ..... 11
l. Central public address system ..... 12
m. None of the above ..... 13

## SECTION F: FINANCE AND ORGANIZATION/MANAGEMENT

**44. Over the next two years, do you expect funding for instructional use of video and audio technologies from each of the sources listed below to increase, decrease, or remain the same?**

**(Circle only one on each line.)**

| | Increase | Remain the Same | Decrease | Don't Know |
|---|---|---|---|---|
| a. General operating funds of the institution | 1 | 2 | 3 | 4 |
| b. Internally generated funds (e.g., sale of instutionally produced courses) | 1 | 2 | 3 | 4 |
| c. Telecourses tuition and fees | 1 | 2 | 3 | 4 |
| d. Special state appropriations | 1 | 2 | 3 | 4 |
| e. Non-federal grants and contracts (including businesses and foundations | 1 | 2 | 3 | 4 |
| f. Federal grants and contracts | 1 | 2 | 3 | 4 |

**45. Over the next two years, will your institution's expenditures for video and audio technologies used in instruction (equipment, programming/materials, and personnel) increase, decrease, or remain the same?**

**(Circle only one on each line.)**

| | Increase | Remain the Same | Decrease | Don't Know |
|---|---|---|---|---|
| **Video** | | | | |
| a. Equipment | 1 | 2 | 3 | 4 |
| b. Programs/materials | 1 | 2 | 3 | 4 |
| c. Personnel | 1 | 2 | 3 | 4 |
| **Audio** | | | | |
| d. Equipment | 1 | 2 | 3 | 4 |
| e. Programs/materials | 1 | 2 | 3 | 4 |
| f. Personnel | 1 | 2 | 3 | 4 |

46. In your institution, who has primary responsibility for each of the following activities? (Circle only one on each line.)

| | Board of Trustees | Administrative Officer (e.g., CEO, Comptroller) | Academic Officer (e.g., Provost, Chancellor, or Academic Dean) | Department Head | Faculty Committee | Individual Faculty | Specialized Audio/Video Staff | Not Applicable |
|---|---|---|---|---|---|---|---|---|
| a. Determining telecourse/audio course offerings | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| b. Establishing budget for telecourse/audio course offerings | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| c. Determining faculty assignments for telecourses/audio courses | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| d. Determining student tuition and fees for telecourses/audio courses | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| e. Planning faculty training for instructional use of video/audio | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| f. Establishing budget for purchasing classroom video/audio equipment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| g. Selection of brand or supplier for classroom video/audio equipment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| h. Determining whether classroom video/audio equipment is placed in specific location or rotated among classrooms on request | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| i. Determining telecourse/audio course credit requirements on transferability | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| j. Representing institution in telecourse/audio course consortium decision making | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

*Thank you for taking the time to fill out this questionnaire.*

**If we should need to contact you regarding the questionnaire, what is the best time to call?** _____

**What is your telephone number?**

☐☐☐ ☐☐☐ – ☐☐☐☐

Area Code Number

*To receive a summary report of the findings of this study, check here ☐ and supply us with your:*

Name _____

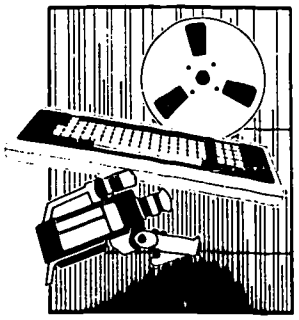
Address _____

_____

Research Triangle Institute, P.O. Box 12194, Research Triangle Park, North Carolina 27709

# A Study of the Educational Uses of Technology in Higher Education

# Teacher Education Questionnaire



Corporation for Public Broadcasting

Endorsed by:

American Association of Community and Junior Colleges (AACJC)

American Association of State Colleges and Universities (AASCU)

American Council on Education (ACE)

Association of American Colleges (AAC)

Association of American Universities (AAU)

Association of Physical Plant Administrators of Universities and Colleges (APPAUC)

Council of Independent Colleges (CIC)

National Association of State Universities and Land Grant Colleges (NASULGC)

National University Continuing Education Association (NUCEA)

All information which would permit identification of the individual respondent or institution will be held in strict confidence, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any purposes without the respondent's expressed permission, except as required by law.

## IMPORTANT DEFINITIONS

For the specific purposes of this study, please use the following definitions for terms that appear in the questionnaire.

**Video Technologies:** Refers to any technologies that carry or display pictures and sound material, including broadcast TV or teletext, cable TV or teletext, videocassette/videotape, videodisc, closed circuit TV, or ITFS. Does not include videotex, still photography, film strips, or motion picture film.

**Audio Technologies:** Refers to technologies that carry or present sound material only through audiocassette/audiotape, record, telephone, and radio.

## SECTION A: GENERAL INFORMATION

**1. Does your institution offer both undergraduate and graduate courses in teacher education?**

(Circle one.)

No, undergraduate courses only ..... 1
Yes, both graduate and undergraduate courses ..... 2

**2. How many undergraduate and graduate students in elementary and secondary teacher training are enrolled in the School/Department of Education during the current term?**

**(If none, enter zero.)**

a. Number of undergraduate students ..... _____

b. Number of pre-service graduate students ..... _____

c. Number of in-service graduate students ..... _____

## SECTION B: COMPUTERS

**3. During the 1984-85 school year, has the School/Department of Education offered to students (directly or through cooperative arrangements within your own institution or with another institution/organization) teacher training in the instructional uses of computers?**

**(Circle one.)**

No ..... 1 → *GO TO Q.13*
Yes ..... 2 → *CONTINUE WITH Q.4*

4. **Which of the following types of training in the instructional uses of computers does the School/Department of Education offer or require?**

(Circle all that apply on each line.)

| | Require for In-Service Students | Require for Pre-Service Students | Offer But Do Not Require | Do Not Offer |
|---|---|---|---|---|
| a. Training in the uses of computers in instructional management (e.g., testing, recordkeeping, planning individualized instruction) | 1 | 2 | 3 | 4 |
| b. Training in the "tool" uses of computers (e.g., spread sheet, word processing, problem solving) | 1 | 2 | 3 | 4 |
| c. Training in the use of computers for interactive control of video or audio materials | 1 | 2 | 3 | 4 |
| d. Training in the use of computers for delivery of programmed instruction (e.g., tutorials, drill and practice) | 1 | 2 | 3 | 4 |
| e. Training in the integration of computer use with overall instructional methods | 1 | 2 | 3 | 4 |
| f. Training in the integration of computer use with overall curriculum content | 1 | 2 | 3 | 4 |
| g. Training in the writing or design of computer programs | 1 | 2 | 3 | 4 |
| h. Training in the selection of software for use in instruction | 1 | 2 | 3 | 4 |
| i. Training in the management of multiple small groups of students using computers | 1 | 2 | 3 | 4 |
| j. Training in the operation of equipment | 1 | 2 | 3 | 4 |
| k. Other *(please specify)* _____ | 1 | 2 | 3 | 4 |

5. **Which of the following describe the types of programs in teacher training that your institution offers for the instructional uses of computers?**

(Circle all that apply.)

a. Module(s) within an education course ..... 1
b. A full course ..... 2
c. Summer institutes ..... 3
d. Workshops ..... 4
e. Other *(please specify)* _____ ..... 5

6. **Who is responsible for conducting this training?**

(Circle all that apply.)

a. School/Department of Education faculty ..... 1
b. Computer science faculty ..... 2
c. Other faculty within my institution ..... 3
d. School districts ..... 4
e. Vendors ..... 5
f. Other private industry ..... 6
g. Outside consultants ..... 7
h. Other *(please specify)* _____ ..... 8

7. **How many students are receiving this training during the current term?**

**(If none, enter zero.)**

a. Number of undergraduate students ..... _____
b. Number of pre-service graduate students ..... _____
c. Number of in-service graduate students ..... _____

8. **Is training offered by the School/Department in the instructional uses of computers differently for graduate students than for undergraduate students?**

**(Circle all that apply.)**

a. School/Department does not have a graduate program ..... 1
b. No, training program is about the same for graduate and undergraduate students ..... 2
c. Yes, **amount** of training is very different for graduate students ..... 3
d. Yes, **kind** of training is very different for graduate students ..... 4

9. **How many hours of training in the instructional uses of computers are typically offered for each of the following groups of students during the 1984-85 academic year?**

**(If none, enter zero.)**

a. Undergraduate students ..... _____ hours
b. Pre-service graduate students ..... _____ hours
c. In-service students ..... _____ hours

10. **Is any teacher training in the instructional uses of computers required of any pre-service students?**

**(Circle one.)**

No ..... 1 → *GO TO Q.13*
Yes ..... 2 → *CONTINUE WITH Q.11*

11. **If so, for what grade level specialties is training in the instructional uses of computers required for students preparing to teach?**

**(Circle all that apply.)**

a. Early childhood ..... 1
b. Elementary school ..... 2
c. Secondary school ..... 3
d. Adult Basic Education ..... 4
e. All of the above ..... 5

12. **Which of the following describe the types of teacher training programs in the instructional uses of computers required for pre-service students?**

**(Circle all that apply.)**

a. Module(s) within an education course ..... 1
b. A full course ..... 2
c. Summer institutes ..... 3
d. Workshops ..... 4
e. Other *(please specify)* _____ ..... 5

13. **What are your School/Department of Education's plans regarding future training in the instructional uses of computers?**

**(Circle all that apply.)**

a. Adding new qualified faculty ..... 1
b. Adding new courses ..... 2
c. Phasing out certain courses ..... 3
d. Expanding facilities and/or equipment ..... 4
e. Initiating a joint program with local industry ..... 5
f. Increasing emphasis on training in the selection of software ..... 6
g. Decreasing emphasis in the training of the operation of equipment ..... 7

14. **Does your School/Department have formal (written) policies concerning computer literacy (above and beyond any institution-wide policies) that all teacher education students should achieve?**

**(Circle one.)**

No ..... 1 → *GO TO Q.16*
Yes ..... 2 → *CONTINUE WITH Q.15*

15. **Which of the following elements do your School/Department's formal computer literacy policies include?**

**(Circle all that apply.)**

a. Students should take an introductory course in computers for credit ..... 1
b. Students should be able to write a simple computer program ..... 2
c. Students should be able to document their own programming ..... 3
d. Students should be able to test and debug simple programs ..... 4
e. Students should know how to develop simple computer-oriented algorithms ..... 5
f. Students should be able to document their own algorithms ..... 6
g. Students should know general operations or procedures for using canned software (e.g., loading, backup, listing, saving, deleting, running programs) ..... 7
h. Students should know what general types of problems are (and are not) amenable to computer solution ..... 8
i. Students should understand the potential use of large bodies of quantitative data in a particular field of study ..... 9
j. Students should be familiar with the social implications of computer use (e.g., job loss from automation) ..... 10
k. Students should be familiar with the ethical issues associated with computer use (e.g., data privacy, copyrights, electronic trespass) ..... 11
l. Other *(please specify)* _____ ..... 12

## SECTION C: VIDEO AND AUDIO TECHNOLOGIES

16. **During the 1984-85 school year, has the School/Department of Education offered to students (directly or through cooperative arrangements within your own institution or with another institution/organization) teacher training in the instructional uses of VIDEO technologies (please refer to definition on page 1)?**

**(Circle one.)**

No ..... 1 → *GO TO Q.24*
Yes ..... 2 → *CONTINUE WITH Q.17*

17. **Which of the following types of training in the instructional uses of video technologies does the School/Department of Education offer or require?**

(Circle all that apply on each line.)

| | Require for In-Service Students | Require for Pre-Service Students | Offer But Do Not Require | Do Not Offer |
|---|---|---|---|---|
| a. Training in the selection of video/TV programs for use in instruction | 1 | 2 | 3 | 4 |
| b. Training in the production or design of video/TV programs for use in instruction | 1 | 2 | 3 | 4 |
| c. Training in the use of live interactive television for instruction | 1 | 2 | 3 | 4 |
| d. Training in the integration of video use with general instructional objectives | 1 | 2 | 3 | 4 |
| e. Training in the integration of video with overall curriculum content | 1 | 2 | 3 | 4 |
| f. Training in the use of video enhancements with computers | 1 | 2 | 3 | 4 |
| g. Training in the operation of equipment | 1 | 2 | 3 | 4 |

18. **Which of the following describe the types of programs in teacher training that your institution offers for the instructional uses of video technologies?**

(Circle all that apply.)

a. Module(s) within an education course ..... 1
b. A full course ..... 2
c. Summer institutes ..... 3
d. Workshops ..... 4
e. Other *(please specify)* _____ ..... 5

19. **Who is responsible for conducting this training?**

(Circle all that apply.)

a. School/Department of Education faculty ..... 1
b. Specialized audio/video staff ..... 2
c. Other faculty within my institution ..... 3
d. School districts ..... 4
e. Local public TV station personnel ..... 5
f. Other private industry ..... 6
g. Outside consultants ..... 7
h. Other *(please specify)* _____ ..... 8

20. **How many students are receiving this training during the current term?**

(If none, enter zero.)

a. Number of undergraduate students ..... _____
b. Number of pre-service graduate students ..... _____
c. Number of in-service graduate students ..... _____

21. **Is any teacher training in the instructional uses of video technologies required of any pre-service students?**

**(Circle one.)**

No ..... 1 → *GO TO Q.24*
Yes ..... 2 → *CONTINUE WITH Q.22*

22. **If so, at what grade levels is training in the instructional uses of video technologies required of any pre-service students?**

**(Circle all that apply.)**

a. Early childhood ..... 1
b. Elementary school ..... 2
c. Secondary school ..... 3
d. Adult Basic Education ..... 4
e. All of the above ..... 5

23. **Is training offered by the School/Department in the instructional uses of video technologies differently for graduate students than for undergraduate students?**

**(Circle all that apply.)**

a. School/Department does not have a graduate program ..... 1
b. No, training program is about the same for graduate and undergraduate students ..... 2
c. Yes, **amount** of training is very different for graduate students ..... 3
d. Yes, **kind** of training is very different for graduate students ..... 4

24. **During the 1984-85 school year, has the School/Department of Education offered to students (directly or through cooperative arrangements within your own institution or with another institution/organization) any teacher training in the instructional uses of AUDIO technologies (please refer to definition on page 1)?**

**(Circle one.)**

No ..... 1 → *GO TO Q.28*
Yes ..... 2 → *CONTINUE WITH Q.25*

25. **Which of the following types of training in the instructional uses of audio technologies does the School/Department of Education offer or require?**

**(Circle all that apply on each line.)**

| | Require for In-Service Students | Require for Pre-Service Students | Offer But Do Not Require | Do Not Offer |
|---|---|---|---|---|
| a. Training in the use of audio conferencing in instruction | 1 | 2 | 3 | 4 |
| b. Training in the selection of audio materials for use in instruction | 1 | 2 | 3 | 4 |
| c. Training in the production or design of audio materials for use in instruction | 1 | 2 | 3 | 4 |
| d. Training in the use of music/speech synthesizers in instruction | 1 | 2 | 3 | 4 |
| e. Training in the integration of audio use with overall instructional methods | 1 | 2 | 3 | 4 |
| f. Training in the integration of audio use with overall curriculum content | 1 | 2 | 3 | 4 |
| g. Training in the operation of equipment | 1 | 2 | 3 | 4 |

**26. How many students are receiving this training during the current term? (If none, enter zero.)**

a. Number of undergraduate students ..... _____

b. Number of pre-service graduate students ..... _____

c. Number of in-service graduate students ..... _____

**27. Is training offered by the School/Department in the instructional uses of audio technologies differently for graduate students than for undergraduate students?**

**(Circle all that apply.)**

a. School/Department does not have a graduate program ..... 1

b. No, training program is about the same for graduate and undergraduate students ..... 2

c. Yes, **amount** of training is very different for graduate students ..... 3

d. Yes, **kind** of training is very different for graduate students ..... 4

**28. What are your School/Department of Education's plans regarding future training in the instructional uses of video and audio technologies?**

**(Circle all that apply under each column.)**

| | Video Technologies | Audio Technologies |
|---|---|---|
| a. Adding new qualified faculty | 1 | 1 |
| b. Adding new courses | 2 | 2 |
| c. Phasing out certain courses | 3 | 3 |
| d. Expanding facilities and/or equipment | 4 | 4 |
| e. Initiating a joint program with local industry | 5 | 5 |
| f. Increasing emphasis on training in the selection of media and program materials | 6 | 6 |
| g. Decreasing emphasis in the training of the operation of equipment | 7 | 7 |

## SECTION D: AVAILABILITY OF EQUIPMENT AND PROGRAM MATERIALS

**29. Which of the following types of media equipment are available and readily accessible (i.e., can generally be used when needed) to the School/Department of Education for use in training of teacher education students?**

**(Circle only one on each line.)**

| | Available and Readily Accessible | Available But Not Readily Accessible | Not Available |
|---|---|---|---|
| a. Television sets | 1 | 2 | 3 |
| b. Videocassette/videotape recorders | 1 | 2 | 3 |
| c. Videodisc players | 1 | 2 | 3 |
| d. Video cameras | 1 | 2 | 3 |
| e. Radios | 1 | 2 | 3 |
| f. Audiocassette/tape recorders | 1 | 2 | 3 |
| g. Audio conferencing facilities | 1 | 2 | 3 |
| h. Record players | 1 | 2 | 3 |
| i. Pocket calculators (programmable) | 1 | 2 | 3 |
| j. Microcomputers | 1 | 2 | 3 |
| k. Word processors | 1 | 2 | 3 |
| l. Computer modems | 1 | 2 | 3 |
| m. Terminals connected to mini/mainframe computers | 1 | 2 | 3 |
| n. Local area microcomputer networks | 1 | 2 | 3 |
| o. Interactive videodisc players (with computers for control) | 1 | 2 | 3 |
| p. Videotex terminals | 1 | 2 | 3 |
| q. Teletext converters | 1 | 2 | 3 |

30. **Does your School/Department of Education have an instructional materials center or other central collection that contains any of the following for use by faculty or students?**

**(Circle all that apply.)**

a. Videocassettes/tapes or videodiscs ..... 1
b. Interactive videodisc packages with computer software ..... 2
c. Audiocassettes/tapes or records (music only) ..... 3
d. Audiocassettes/tapes or records (excluding music only) ..... 4
e. Instructional courseware for micros ..... 5
f. Modular software for programmed instruction on micros ..... 6
g. Business applications software (e.g., VisiCalc) for micros ..... 7
h. Word processing software (e.g., Wordstar) for micros ..... 8
i. Computer-based instructional management software for micros ..... 9
j. Statistical analysis packages for micros ..... 10
k. Data base systems for micros (e.g., dBase II) ..... 11
l. Microcomputer software documentation ..... 12
m. Mainframe software documentation ..... 13
n. None of the above ..... 14

*Thank you for taking the time to fill out this questionnaire.*

**If we should need to contact you regarding the questionnaire, what is the best time to call?** _____

**What is your telephone number?**

☐☐☐ ☐☐☐ – ☐☐☐☐

Area Code Number

*To receive a summary report of the findings of this study, check here ☐ and supply us with your:*

Name: _____

Address: _____

# Corporation for Public Broadcasting

1111 16th Street NW, Washington, DC 20036
(202) 293-6160

The Corporation for Public Broadcasting (CPB) was established as a result of the Public Broadcasting Act of 1967 to promote the development of a diversified public television and radio service for all of the American people.

The Corporation, *neither an agency nor an institution of the Federal Government*, was created as a free-standing, private, non-profit corporation to insure its independence as the public's representative in public broadcasting.

Its authority to act in the public interest stems from the 1967 legislation. Among CPB's responsibilities are:

- Supporting public radio and television stations with direct grants to help meet operating and programming costs;
- Providing funds for the production and acquisition of innovative and high-quality programs for national distribution;
- Safeguarding the independence of local licensees and the freedom of expression within a decentralized public broadcasting community;
- Acting as the trustee for the funds appropriated by the Congress or contributed to CPB by other sources;
- Advancing the technology and application of delivery systems;
- Conducting research in matters relating to non-commercial educational television.

Appendix B

SUMMARY OF HEUS-85 STUDY DESIGN AND SURVEY METHODOLOGY

## The HEUS-85 Universe of Institutions

The HEUS-85 study design called for a census survey of all public and private, two- and four-year postsecondary collegiate institutions included in the latest available Higher Education Directory,[1] as well as some strictly graduate or professional schools in the directory. The latter schools have no undergraduate offerings and were included in the study universe primarily to maintain some comparability with the HEUS-79 universe. Initially, 2,842 institutions were identified from the HEP file* as eligible for the HEUS-85 survey. However, subsequent activities identified a number of these institutions as "frame errors" (e.g., closed schools, central offices) and the final total number of institutions constituting the study universe was determined to be 2,830, including:

| | |
|---|---|
| Schools with no teacher education program | 1,628 |
| Schools with teacher education program | 1,202 |
| Total | 2,830 |

## Data Collection Activities

The HEUS-85 study objectives and research questions required that data be collected from individuals most knowledgeable about (1) video and audio, (2) computers, and where applicable, (3) teacher preparation at the institutional level. Survey questionnaires (Appendix A) were developed for completion by each of these respondent types (i.e., an Instructional Video/ Audio Questionnaire, a Computers for Instruction Questionnaire, and a Teacher Education Questionnaire).

It was thought that response rates might be increased if the study were endorsed by well-known and respected organizations

---

[1] Higher Education Publications, Inc., The HEP 1984 Higher Education Directory (Washington, D.C.: Author, 1984).

*Excluded from the 1983-84 HEP file were: schools with illegal FICE codes, all campus summary codes, central offices, all system summary codes, system offices, joint libraries, schools "no longer eligible," schools in outlying territories, schools with no names, proprietary schools, non-degree-granting specialty schools, other schools offering only a diploma or certificate, graduate centers for research only, service schools other than the U.S. Academies, divinity schools that do not offer liberal arts and sciences or teacher education programs and blank codes.

with which institutional officers and potential respondents might be affiliated. Therefore, appropriate endorsements were obtained from the American Association of Community and Junior Colleges (AACJC), the American Association of State Colleges and Universities (AASCU), the American Council on Education (ACE), the Association of American Colleges (AAC), the Association of American Universities (AAU), the Association of Physical Plant Administrators of Universities and Colleges (APPAUC), the Council of Independent Colleges (CIC), the National Association of State Universities and Land Grant Colleges (NASULGC), and the National University Continuing Education Association (NUCEA). The endorsement of these agencies/organizations was indicated on the cover of the study questionnaires and in the margin of special study stationery used for all correspondence during the survey.

Data were collected from December 1984 through May 1985 by mail with telephone followup (prompting and interviews) of nonrespondents. However, since the most appropriate individuals were not identified beforehand at each institution to complete the three questionnaires, the first step involved notifying of all eligible institutions. Notification letters were mailed to the chief executive officer (CEO) of all institutions identified as being in the population of interest, explaining the nature and importance of the study and requesting that the CEO complete an enclosed postage-paid postcard identifying the individuals to whom the questionnaires should be sent. Nonresponding institutions were called in an attempt to obtain these names by telephone. The notification process obtained information on up to three staff members at 2,786 responding institutions.

Subsequent HEUS-85 survey activities consisted of (1) an initial questionnaire mailing to all institutional staff members identified at the notification stage; (2) a follow-up thank you/reminder postcard to all individuals one week after initial mailout; (3) a second questionnaire mailout to nonresponders about two weeks later; (4) telephone prompting of or attempts to obtain telephone interviews with all nonrespondents who had not previously refused; and (5) a third follow-up questionnaire mailing to all nonrespondents to the second Teacher Education Questionnaire mailing and to all telephone-prompted nonrespondents who requested it on the Video/Audio and Computer Questionnaires.

The cut off date for data collection (acceptance of returned questionnaires and completed telephone interviews) was May 25, 1985. Final response rates for the three questionnaires are shown in Table B-1.

Data Receipt and Document Control

All notification postcards and questionnaires returned by mail were received and batched at a centralized location.

Questionnaires completed during telephone interviews were likewise batched and forwarded for receipt control data entry. Postcards were batched and forwarded to receipt control entry, where the names of persons provided as appropriate questionnaire respondents were entered into the system through direct key-to-tape data entry.

Manual Editing and Coding

It was determined that manual editing and coding should define simple procedures and that more complex editing steps or imputations should be left to the more efficient and accurate computer-edit stage. Therefore, the manual editing and coding rules were defined principally to make the responses provided more compatible with subsequent data entry operations. Editors and coders were trained and given a manual that completely specified general editing and coding rules for the basic item formats.

Data Entry

Direct key-to-tape data entry was used for all returned questionnaires. Keying was controlled by data entry programs designed for the specific documents (the three questionnaires), and questionnaire design allowed data to be keyed directly from the hard-copy documents as edited and coded in the manual edit stage. All keyed data were 100 percent key verified.

Machine Editing and Coding

The basic principles determining the machine processing of data were (1) assurance of an accurate magnetic transcription of the questionnaire responses and (2) production of a file that would provide flexibility for subsequent analyses decisions. Resolution of errors detected in processing took two basic forms. When error pattern or frequency suggested coding or keying error, hard-copy documents were consulted. When resolution from hard copy was not suggested or realized, the data elements in error were appropriately flagged for identification during subsequent analysis.

Weighting

Equal weights were assigned to all members in the study universe; these weights were subsequently adjusted for nonresponse in an attempt to reduce to the extent possible, potential bias resulting from such nonresponse. These adjusted weights were then used for estimating results for the total population of institutions or teacher education programs in the nation.

## Additional Technical Documentation

The following publications provide complete details and technical documentation pertaining to the HEUS-85 survey design or methodology.


G. J. Burkheimer and E. A. Ciftan Data Base Design for the Higher Education Utilization Study: HEUS-85 (Research Triangle Park, N.C.: Research Triangle Institute, August 1985).

G. J. Burkheimer and R. W. Whitmore Higher Education Utilization Study (HEUS-85): Final Methodology Report (Research Triangle Park, N.C.: Research Triangle Institute, December 1985).

Table B·1

Questionnaire Response Rates by Type of Institution

| Type of Institutions | Total Number | No. (%) Questionnaire Responses: Video/ Audio | Computer | Teacher Education | |
|---|---|---|---|---|---|
| All Institutions | 2,830 | 2,410 (85) | 2,439 (86) | NA | NA |
| Two-Year Institutions | | | | | |
| Public | 926 | 824 (89) | 805 (87) | NA | NA |
| Private | 180 | 149 (83) | 147 (82) | NA | NA |
| Total | 1,106 | 973 (88) | 952 (86) | NA | NA |
| Four-Year Institutions | | | | | |
| Public | 541 | 444 (82) | 468 (87) | NA | NA |
| Private | 1,073 | 897 (84) | 927 (86) | NA | NA |
| Total | 1,614 | 1,341 (83) | 1,395 (86) | NA | NA |
| Professional/ Graduate Schools | 110 | 96 (87) | 92 (84) | NA | NA |
| Institutions with Teacher Education Programs | 1,202 | NA NA | NA | NA | 1,101 (92) |

Appendix C

## STUDY ADVISORY COMMITTEE

The successful completion of this study would not have been possible without the expert advice and guidance of the Study Advisory Committee. The members of the HEUS-85 advisory committee are listed here with the titles and organizations with which they were affiliated at the time the advisory committee was convened (1984-85).

Brian Brightly
President
Adult Learning Listening Network

John Lott Brown
President
University of South Florida

Dave Bunting
Director of Non-Traditional Studies
Kirkwood Community College

Stephen Ehrmann
Program Officer
Fund for the Improvement of Postsecondary Education

Kerry Johnson
Director, Center for Instructional Development and Evaluation
University of Maryland

Greg Epler Wood
Mid-Atlantic Regional Coordinator
National Federation of Local Cable Programmers

Carol Koffarnus
Vice President
Postsecondary Telecommunications
Central Education Network

Raymond Lewis
Research Director
Center for Learning and Telecommunications
American Association of Higher Education

Jane Richards
Executive Director
Indiana Higher Education Telecommunications System

Ilona Turisi
Director, Education Services
Acorn Computers